

A DAMON COMPANY

FLYING MODEL ROCKET CATALOG



INSIDE!
More Than 100 Exciting
Flying Model Rockets.

Consumer Catalog

No. 811P

Starship Nova featured on page 38.

75¢

ESTES ASTROCAM 110™

Aerial Camera with Delta II Launch Vehicle



Actual "AstroCam 110" photo of Three Mile Island Facility, Middletown, Pa. Taken by Scott Pearce, Westchester, PA.



Film and Developing Available Locally!



(Launch System, engine, glue, and film are not included.)

SKILL LEVEL 2

YOU CAN EXPERIENCE THE THRILL AND EXCITEMENT OF TAKING INCREDIBLE COLOR PHOTOGRAPHS FROM HUNDREDS OF FEET IN THE SKY. As your rocket reaches apogee and begins its descent to Earth, the ejection charge of your rocket engine trips the AstroCam 110's 1/500th sec. shutter and "snap" . . . you have just taken a dramatic aerial photograph from far above. The "new" AstroCam 110 uses high speed Kodak Kodacolor 110 color print film ASA 400 or equivalent (not included). Film and developing are available locally.

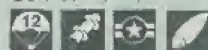
Special features include easy, quick-assembly, high quality acrylic lens, molded plastic housing, glass first surface mirror, and high performance aerodynamic design for minimum drag and maximum altitude. Simple to operate and shoots one, crisp, clear, full-color 110 photo per flight.

Delta II launch vehicle features specially designed, pre-colored plastic fin-unit for consistently smooth and stable flights. Plus white body tube, quick-release engine mount and great looking, two-color kit decals with dual roll patterns. No painting required! Returns to Earth via 12" dia. parachute. **Specifications - Camera with Launch Vehicle:** Length: 19.1" (49 cm) Dia. 1.34" (34 mm) Fin Span 4.75" (12 cm) Wt. 3.75 oz. (106 g) Ship. Wt. 14 oz.

Take Incredible "Color" Photos From Hundreds of Feet In The Sky!

Camera Specifications:
Length: 6.5" (16.5 cm)
Dia. 1.39" (35.3 mm)
Wt. 1.36 oz. (38.5 g)
(Without film)
Wt. 1.76 oz. (50 g)
(With film)

ENGINES: B8-5 B8-7
B14-5 B14-7 C6-5
C6-7 (1st Flt.)



No. 1327
ONLY \$20.00

Welcome To Model Rocketry!

This will be a year of renewed interest in space science and planetary exploration as the United States launches the Space Shuttle on its first orbital flight. Already Americans have thrilled to the excitement of close-up pictures of the moons and rings of Saturn — and there's more to come. Just when you think we've done it all, the endless reaches of deep space bring ever-new challenges to man.

Estes launches into this exciting year with 23 new products, including our first exotic Starter Outfit featuring the dramatic Falcon Commander spacecraft. Estes rocketeers will be able to follow their own space program and join in this national spirit of scientific exploration.

It's a small world . . . but a vast universe . . . and the adventures of space go on and on. And again this year, the sky is the limit with Estes . . . AND YOU ARE THERE!



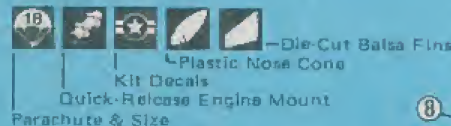
Vern and Gleda Estes



Sincerely,
Vern
Vern Estes

Here's How To Use Your Estes Catalog.

- 1 Skill Level number recommends the general skill and experience necessary for a rocketeer to successfully complete the kit. Skill Level 1 kits are suggested for beginners, Skill Level 2 for intermediate rocketeers, and so on to Skill Level 5, Expert Rocketeer. All kits in this catalog are grouped by Skill Level.
- 2 Name of the kit.
- 3 Special features and additional kit information.
- 4 Specifications including length, diameter, and weight, in both English and Metric Equivalents.
- 5 Kit Feature Symbols indicate the following kit-features:

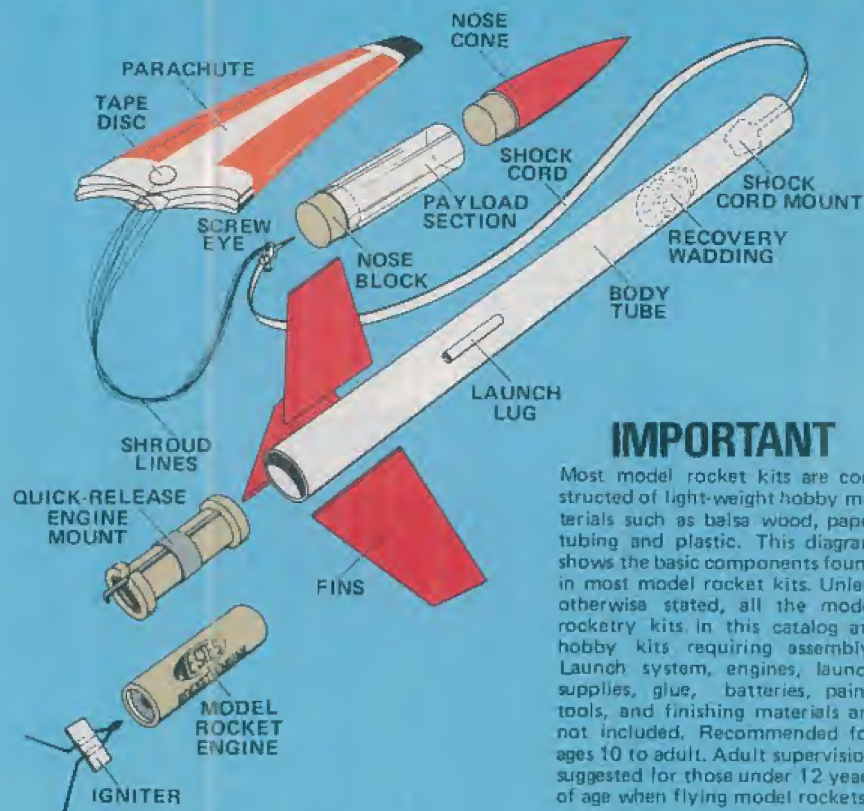


- 6 Engine Types lists all recommended engines for flying the rocket. Engines are listed from least powerful to most powerful. Also, indicates which engine should be used for the first flight.
- 7 Product number for kit which should always be used when ordering.
- 8 Price of the kit. (Or see Price List)
- 9 Average Shipping Weight for these models.



All prices in this catalog are subject to change without notice

Parts of a Model Rocket



IMPORTANT

Most model rocket kits are constructed of light-weight hobby materials such as balsa wood, paper tubing and plastic. This diagram shows the basic components found in most model rocket kits. Unless otherwise stated, all the model rocketry kits in this catalog are hobby kits requiring assembly. Launch system, engines, launch supplies, glue, batteries, paint, tools, and finishing materials are not included. Recommended for ages 10 to adult. Adult supervision suggested for those under 12 years of age when flying model rockets.

Skill Levels

SKILL LEVEL 1

Very Simple - Recommended for beginners

SKILL LEVEL 2

Fairly Easy - Recommended for individuals with some model building experience.

SKILL LEVEL 3

Average Challenge - Recommended for the experienced model builder.

SKILL LEVEL 4

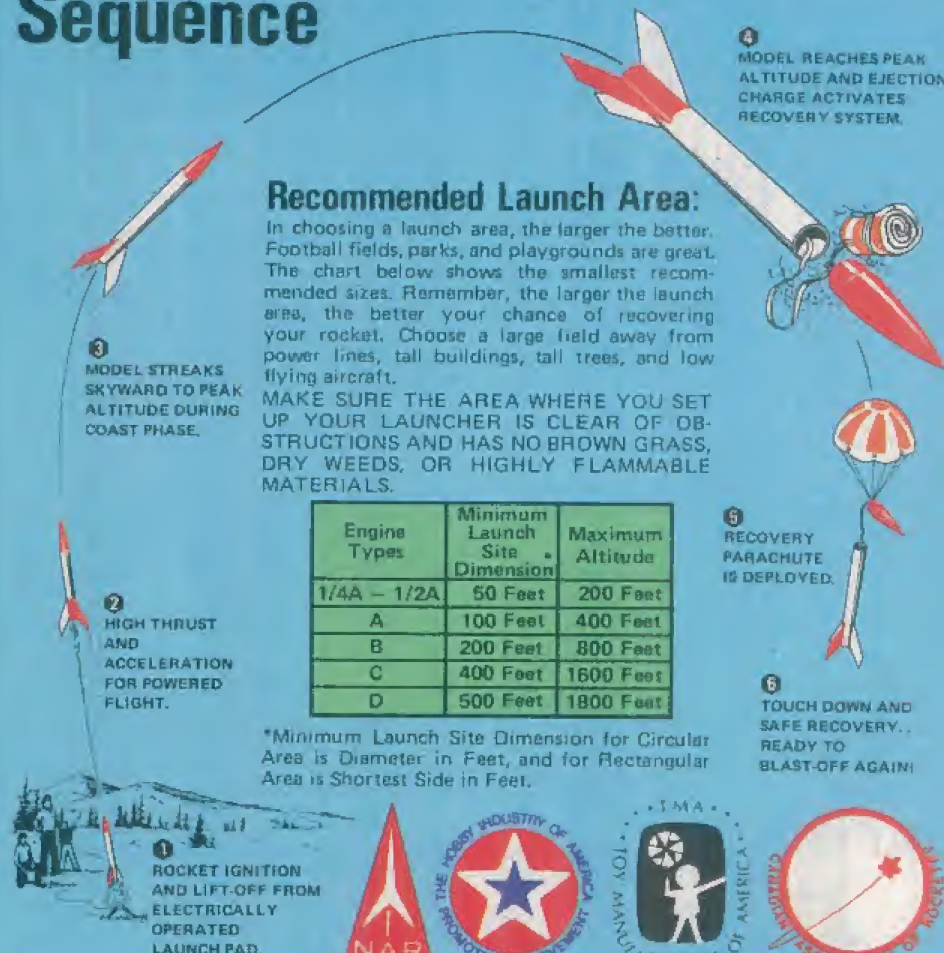
Very Challenging - Recommended for the advanced model builder.

SKILL LEVEL 5

Extremely Challenging - Recommended for the expert model builder.

All model rocket kits in this catalog require assembly unless otherwise stated. Some of these flying model rockets can be put together and ready to launch in minutes. Others with their sophisticated aerodynamics and wealth of detail are more challenging. The Skill Level numbers given on each page recommend the skills and experience necessary for a rocketeer to successfully complete the kits listed. Generally speaking, it is not wise to jump skill levels. Unless you are an extremely experienced modeler, you should complete a kit of Skill Level 1 before attempting Skill Level 2 . . . and you should build a Skill Level 2 rocket before moving on to Skill Level 3 . . . and so on.

Model Rocket Flight Sequence



Model Rocketry Is An Internationally Recognized Hobby With A Safety Record Of More Than 175 Million Successful Model Rocket Launchings.

Estes Model Rocket Engines Are Safety Tested And Contest Certified By:

- U.S. National Association of Rocketry
 - Canadian Association of Rocketry
- Estes Model Rocket Engines Have Been Tested And Approved By:

- United States B.O.E.
- Truesdell Laboratories, Inc.
- Canadian Department of Energy, Mines, and Resources
- Government of West Germany

Estes Model Rocketry Products Meet The Standards And Requirements Established By:

- National Fire Protection Association
- U.S. Consumer Product Safety Commission
- U.S. Food & Drug Administration
- U.S. Department of Transportation
- Federal Aviation Administration
- U.S. Postal Service

- United Parcel Service
- American Insurance Association
- International Air Transport Association
- Inter-Governmental Maritime Consultative Organization

Model Rocketry Is Endorsed As A Safe And Rewarding Hobby By:

- Cub Scouts of America
- Boy Scouts of America
- YMCA's
- National 4-H Clubs
- Civil Air Patrol
- NASA
- United States Air Force
- U.S.A.F. - J.R.O.T.C. Programs
- 15,000 Elementary, Jr. High, and High Schools
- Major Colleges and Universities
- Hundreds of Camp and Recreation Programs

Challenger-1

Flying Model Rocketry Starter Kit

SKILL LEVEL
1
Recommended
for Beginners

This high performance Challenger-1 rocket is very easy-to-assemble with bright orange plastic nose cone and fin-unit. Features quick-finish decor with pre-colored body tube and realistic roll pattern decals. No painting required! The Challenger-1 rocket can be launched over and over again and can attain altitudes over 1,000 feet! Returns via 12' recovery parachute. You need only replace the rocket engine, igniter, and recovery wadding for each new flight. Challenger-1 Launch Control System features futuristically designed hand-held launch controller with arming lamp, safety key, launch button, and 15 feet of launch cable with micro-clips. Plus sleekly designed launch pad with blast deflector plate and 1/8" x 36" two-piece launch rod. Entire system sets up quickly for launch and disassembles easily for compact storage.

Flight Pak includes three N.A.R. safety certified model rocket engines, parachute recovery wadding, and high reliability Solar Igniters for three exciting flights.

Special Bonus - New "Beginner's Tech Manual" filled with model rocketry data to get you started off right.

Ship. Wt. 1 lb.

ENGINES: 1/2A6-2

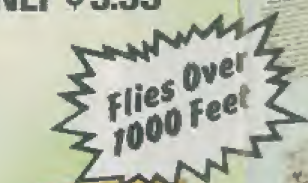
A8-3 (1st Flt.) A8-5

B4-4 B6-4 B8-5 C6-5

C6-7

No. 1416

ONLY \$9.95



Challenger-1
Flying Model Rocketry
Starter Kit



(Requires 6 or 12 volt lantern battery and glue - Not Included.)

Assembles in less than 45 Minutes

FALCON COMMANDER

Exotic Flying Model Rocket Starter Kit

SKILL LEVEL
1
Recommended
for Beginners



NEW!

**Dramatic Flights
Over 1,000 Feet!**

FEATURES:

Futuristic Forward Swept-Wing Falcon Commander Spacecraft. Easy-to-assemble with die-cut balsa fins, plastic nose cone, and quick-release engine mount. Great flights up to 1,000 feet with 12' parachute recovery. Simple paint scheme and realistic kit decals make it a great display model too!

Launch Control System includes launch pad with blast deflector plate and 1/8" x 36" two-piece launch rod. Futuristic, hand-held launch controller features arming light, safety key and ignition button, plus launch cable with micro-clips.

Flight Pak has three high performance Model Rocket Engines plus Solar Igniters and Parachute Recovery Wadding for your first series of lift-offs.

Special Bonus - The Mini-Alpha Book of Model Rocketry is also included.

Ship. Wt. 1lb.

ENGINES: A8-3 (1st Flt.) A8-5 B4-4 B6-4 B6-5 B8-5 C6-5 C6-7

No. 1428 **ONLY \$10.95**



(Requires 6 or 12 volt lantern battery, glue, and paint - Not Included.) 7

"This is Where to Begin" THE ALPHA III STARTER KIT

SKILL LEVEL

1 Recommended for Beginners

IF YOU INTEND TO MAKE A REAL HOBBY OF ESTES MODEL ROCKETRY, THIS ALPHA III STARTER KIT IS A PROVEN PERFORMER FOR FLIGHT-AFTER-FLIGHT ENJOYMENT.

KIT INCLUDES:

ALPHA III Rocket with bright red plastic fin-unit and nose cone for easy, quick assembly. Plus realistic kit decals and white body tube. No painting required!

PORTA-PAD launch platform with strong girder construction and tilt-adjustment for wind direction. Features 36" long x 1/8" dia. launch rod with blast deflector plate.

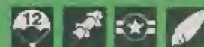
SOLAR LAUNCH CONTROLLER, extremely light-weight and futuristically designed, requiring only 4 alkaline AA batteries (not included). Advanced shape allows for perfect hand-held control and is easily assembled in minutes. Features safety key, continuity check light, and launch button.

FLIGHT PAK with three NAR safety certified Model Rocket Engines, Parachute Recovery Wadding, and Solar Igniters, plus The Mini-Alpha Book of Model Rocketry.

ENGINES: 1/2A6-2 A8-3 (1st Fit.) A8-5 B4-4 B6-4 B8-5 C6-5 C6-7

Ship. Wt. 3 lbs.

No. 1406 ONLY \$16.95



Over
\$23.00
Value!



Save big on the purchase of these exciting model rocketry outfits. Individual components purchased separately cost more!

(Batteries, Glue, and Finishing Supplies not included.)

DER BIG RED MAX SKILL LEVEL 1 Recommended for Beginners. Deluxe Model Rocketry Outfit

VIRTUALLY EVERYTHING YOU NEED TO GET STARTED IN ESTES MODEL ROCKETRY IN A "BIG" WAY. INCLUDES THE BIG RED MAX ROCKET . . . THE ULTRA ADVANCED BIG FOOT LAUNCH CONTROL SYSTEM . . . ENGINES . . . LAUNCHING SUPPLIES . . . AND THE "MINI-ALPHA BOOK OF MODEL ROCKETRY".

At a moderate price you get practically everything needed for assembly, lift-off, and recovery. (Batteries, glue and finishing supplies are not included.)

Experience the fun of building and the thrill of flying the Big Red Max rocket. This big bird, over two feet long, is easy-to-assemble with die-cut balsa fins, quick-release engine mount, huge plastic nose cone, and "far-out" Red Max decal sheet. Excellent performance with giant 18" orange and white parachute.

Big Foot Launch Control System (page 52) is capable of launching all the rockets in this catalog and is especially recommended for launching Maxi-Brutes and other large rockets. Futuristically designed launch platform features rugged plastic construction and enormous "two-foot-print" for maximum launch pad stability. Requires four alkaline "D" cell batteries for power (not included.) Launch pad includes blast deflector plate, 1/8" x 36" two-piece launch rod, and adjustable swivel mount to compensate for wind direction.

Launch control unit features quick assembly plus safety key, continuity check light, ignition button, and 15 feet of launch cable.

Flight Pak is complete, with three high performance, N.A.R. safety-certified engines (two "B" type and one "C" type) plus parachute recovery wadding and "Solar" rocket igniters for your first series of exciting flights.

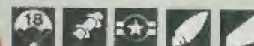
ENGINES: B4-2 B6-2 (1st Fit.)

B4-4 B6-4 C6-5

Ship. Wt. 3 lbs.

No. 1403

ONLY \$19.95



Over
2 Feet
Tall!

\$28.22 Value!
You Save
\$8.27



Ready-To-Launch

X-15 STARTER KIT



1/68th Scale
X-15 Rocket Plane
Ready-to-launch
in 15 minutes.

SKILL LEVEL

1

Recommended
for Beginners.

THE PERFECT BEGINNER'S OUTFIT FOR PARENT AND CHILD. BE READY TO LAUNCH YOUR X-15 ROCKET PLANE IN LESS THAN 15 MINUTES. Features all plastic snap-together construction for easy, quick assembly. Ready-to-fly X-15 Rocket Plane comes

with 8" recovery parachute, authentic scale decor, and easy-lock engine mount. It looks like the real thing!

Portable futuristic launch control system is ruggedly designed to provide launch-after-launch enjoyment. Advanced launch controller is designed for easy-grip hand-held control with safety interlock key, arming light, and launch control button. Realistic launch pad features 24" two-piece launch rod, pre-soldered micro-clips, mini-blast deflector, and sturdy girder construction. The entire system is pre-wired. (Requires four AA size alkaline penlight batteries for operation - not included.)

X-15 Flight Pack includes 3 NAR Safety Certified A3-4T Mini engines, parachute recovery wadding, and Estes high reliability Solar Igniters. Special Bonus: The Mini-Alpha Book of Model Rocketry is also provided to get you started off right.

Ship. Wt. 2 lbs. 8 oz.

No. 0715

ONLY \$19.95

It Really
Flies!



SKILL LEVEL

2

Suggested for individuals
with some model building
experience.

\$34.22 Value!
You Save
\$7.22

"Fly Model Rocketry's Largest Scale Shuttle Orbiter!" NASA SPACE SHUTTLE ORBITER Model Rocketry Outfit



Features
NEW SKYLITE™
skinned foam plastic
parts for easy, quick
assembly!

Dramatic 1/87th semi-scale (H.O. Scale) NASA Space Shuttle with revolutionary new "SkyLite" skinned foam plastic construction.

Easily assembled with molded plastic nose cone, vertical stabilizer fin, rear fuselage, and engine nozzle detail which removes for flight. Delivers spectacular flights over 400' and returns to Earth via huge 18" recovery parachute. Also features realistic kit decals and quick-release engine mount. (See page 33 for more details.)

Big Foot Launch Control System (see page 52) with giant "two-foot-print" for maximum launch pad stability. Futuristic launch controller features safety key, arming light, and ignition button. Powered by four inexpensive "D" size alkaline batteries - not included.

Flight Pak with two B4-2 and one C6-3 high performance model rocket engines, parachute recovery wadding and Solar igniters. Plus the Mini-Alpha Book of Model Rocketry.

Ship. Wt. 3 lbs.

ENGINES: B4-2 (1st Flt.) B6-2 C6-3 C6-3

No. 1425 ONLY \$27.00

(Requires batteries, glue,
and finishing supplies.
Not Included.)



maxi alpha 3

"Pro-Demo" Model Rocketry Outfit

SKILL LEVEL

2

Suggested for individuals
with some model
building experience.

Perfect for professional
style demonstrations.

Features:

GIANT MAXI-ALPHA III ROCKET - Nearly 3 feet long with easy-to-assemble, press-fit, plastic fin-unit and huge plastic nose cone. Features bright red plastic parts and pre-colored white body tube. No painting required! Plus big decal and enormous 24" parachute. (See page 34.)

BIG FOOT™ Model Rocketry Launch System - Designed for launching the big ones with giant two-foot-print, 3/16" x 3" Maxi-launch rod, and blast deflector plate. Futuristic launch controller features safety key, arming light, and ignition button. (See page 52.)

HIGH PERFORMANCE FLIGHT PAK - Three "super-powered" D12-3 Rocket Engines, plus Parachute Recovery Wadding, Solar Igniters, and "The Mini-Alpha Book of Model Rocketry". Ship. Wt. 4 lbs.

No. 1411 . . . **ONLY \$30.00**



Nearly 3 Feet
Tall and Flies
Over 500
Feet High!

(Batteries, glue, and
finishing supplies are
not included.)

ESTES ASTROCAM 110™ AERIAL CAMERA MODEL ROCKETRY OUTFIT With Delta II Launch Vehicle

SKILL LEVEL

2

The
AstroCam
110 uses the
Delta II
Launch
Vehicle or
Challenger II
Model
Rocket (See
page 26) with
special
stabilizing
fin-units for
best photo
results.

Camera is not sold
separately. Other
launch vehicles
are not
recommended.

FEATURES:

*The AstroCam 110, model rocketry's most advanced aerial camera. Shoots sharp, crisp, clear color 110 photos . . . one per flight . . . from hundreds of feet above. Easy-to-assemble and simple to operate.

*Delta II Launch Vehicle features two-color decals, 12" parachute, and special plastic fin-unit for smooth and stable flights, time-after-time. All parts are pre-colored . . . no painting required!

*Big Foot Launch System with giant two-foot print for maximum launch pad stability, 1/8" x 36" launch rod, blast deflector plate, and rugged girder construction. Plus hand-held launch controller with continuity check light, safety key, ignition button, and 15 feet of launch cable.

*Requires 4 alkaline type "D" size batteries for power (not included).

*Flight Pak includes three C6-7, high performance Estes Rocket Engines plus Solar Igniters, Recovery Wadding and the Mini Alpha Book of Model Rocketry.

*Uses Kodak Kodacolor 110 color print film, ASA 400, or equivalent - not included. Film and developing are available locally. Ship. Wt. 3 lbs.

ENGINES: BB-5 BB-7 B14-5 B14-7 C6-5 C6-7 (1st Fit.) No. 1410

Take Incredible
"Color" Photos
From Hundreds of
Feet in The Sky!



ONLY
\$38.00

Over
\$41.00
Value!

(Film, batteries, glue,
and finishing
supplies are not
included.)

Actual "AstroCam 110"
photo of Johnson Space
Center, Houston, TX.

estes aerospace club

**BECOME A
MEMBER
TODAY!**

Join more than 24,000 Estes rocketeers getting the most out of model rocketry. You'll discover membership in the Estes Aerospace Club opens up a whole new world of model rocket activities. The EAC Thrust Bar Achievement Program awards members with iron-on thrust bars & achievement certificates as they progress from one skill level to the next. Your membership includes:

- VIPER ROCKET** — Club's Exclusive High Performance Design.
- MEMBERSHIP CERTIFICATE** — Suitable for framing.
- CLUB EMBLEM** — Official iron-on patch. As you progress to higher skill levels, you receive additional iron-on "thrust" bars.
- DECAL SHEET** — Identify your rockets as part of the EAC fleet!
- RANGE BOX STICKERS** — Multi-purpose stick-ons for your range equipment.
- EAC STATIONERY** — Distinctive stationery for your special notes and letters.
- MODEL ROCKETRY TECHNICAL MANUAL** — Includes information on construction techniques, finishing, stability, tracking, recovery systems, multi-staging, and boost gliders plus much, much, more.
- COPY OF MODEL ROCKET NEWS** — Features free plan designs, technical articles, contests, rocketeer contributions and more.
- EAC PRODUCTS BULLETIN** — Special offers for kits and products available ONLY to EAC members.

**JOIN NOW!
BECOME AN ESTES AEROSPACE CLUB ROCKETEER TODAY!!**

Simply Check the EAC box on your order form and include your payment. Ship. Wt. 9 oz. Regular EAC membership

**No. 1447
ONLY \$5.00**



You Get All This...



THRUST BAR ACHIEVEMENT PROGRAM

SKILL LEVEL ONE
BEGINNER/NEW
EAC MEMBER

SKILL LEVEL TWO
INTERMEDIATE
ROCKETEER

SKILL LEVEL THREE
CRAFTSMAN
ROCKETEER

SKILL LEVEL FOUR
ADVANCED
ROCKETEER

SKILL LEVEL FIVE
EXPERT
ROCKETEER



SKILL LEVEL 1



WIZARD

One of the highest performing vehicles in Estes' fleet with its 1,600 foot altitude capability and huge 30" streamer recovery system that makes it easy to track. Length: 12" (30.5 cm) Dia. 0.736" (18.7 mm) Wt. 0.79 oz. (20 g).
ENGINES: 1/2A6-2 A8-3 (1st Fit.) A8-5 B4-4 B6-4
B8-5 B8-7 B14-5 B14-7 C6-5 C6-7
No. 1292 \$2.25

**FALCON
COMMANDER** Futuristic forward swept-wing spacecraft. Terrific Skill Level 1 exotic model. Can achieve altitudes up to 1,000 feet. Length: 19.12" (49 cm) Dia. .978" (24.8 mm) Wt. 1.1 oz. (30 g).
ENGINES: A8-3 (1st Fit.) A8-5 B4-4 B6-4 B8-5 C6-5 C6-7
No. 1364 \$4.00

KADET

Achieve flights over 1,000 feet with this super high flying sport model. Nearly indestructible with pre-colored plastic nose cone and fin-unit. Quick and easy-to-assemble. No painting required! Easy-trak recovery with 30" fluorescent streamer. Length: 15" (38 cm) Dia. .98" (25 mm) Wt. 1.13 oz. (32 g).
ENGINES: 1/2A6-2 A8-3 A8-5 B4-4 (1st Fit.) B6-4 B8-5 B14-5 C6-5 C6-7
No. 1328 \$4.00

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 8 oz.

SKILL LEVEL

1



STREAK

Lightweight, wind-cheating design (1/8 oz. without engine). Great for contests and records. Features simple feather-weight recovery.
Length: 5.6" (14.2 cm) Dia. 0.720" (18.3 mm)
Wt. 0.1 oz. (3 g.)
ENGINES: 1/2A6-4 (1st Flt.) A8-5 B4-6 B6-6
B8-7 B14-5 C6-7
No. 1204 \$1.95

NEW!



BAT

Unique sport model with far-out "BAT" decor. Easy-to-build. Delivers great flights over 1,000 feet and returns via 90" long streamer. Length: 16.63" (42.2 cm) Dia. .976" (24.8 mm) Wt. .92 oz. (26 g.)
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 C6-5 C6-7
No. 1362 \$3.50

SCOUT

Estes Industries first model rocket, originally developed in 1959. Teaches you elementary balance and design principles. Sleek lines and tumble recovery for really exciting flights. Pat. No. 3,114,317. Length: 7" (18 cm) Dia. 0.765" (19.4 mm) Wt. 0.3 oz. (9 g.)
ENGINES: 1/2A6-2 (1st Flt.) A8-3 B4-4 B6-4 B8-5 B14-5 C6-5
No. 1201 \$1.85

Mark II

Ideal for sport or demonstration flying. Designed for midbody ejection/separation system with streamer recovery. It's an excellent challenge for the novice rocketeer. Top-notch performance. Length: 9.1" (23 cm) Dia. 0.765" (19.4 mm) Wt. 0.7 oz. (20 g.)
ENGINES: 1/2A6-2 (1st Flt.) A8-3 B4-4 B6-4 B8-5 B14-5 C6-5
No. 1202 \$3.25



Alpha

The ideal kit for your first or second rocket. Swept-fin design makes it a really great performer. Features balsa nose cone and fins. Length: 12.25" (31.1 cm) Dia. 0.976" (24.8 mm) Wt. 0.8 oz. (23 g.)
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
No. 1225 \$3.50



X-RAY

Perfect for your first payload/cargo section. The recommended single-stage payload vehicle for small biological or insect projects. Length: 16.75" (42.5 cm) Dia. 0.736" (18.7 mm) Wt. 0.7 oz. (20 g.)
ENGINES: 1/2A6-2 A8-3 (1st Flt.) B4-4 B6-4 B8-5 B14-5 C6-5
No. 1218 \$5.25



METEOR

Super sport flyer with 90" streamer recovery. High performance flights to 1,200 feet. Length: 18.63" (47.3 cm) Dia. .976" (24.8 mm) Wt. .94 oz. (26.5 g.)
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 C6-5 C6-7
No. 1370 \$3.50

NEW!

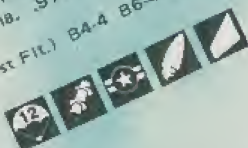
Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 5 oz.

SKILL LEVEL 1

NEW!

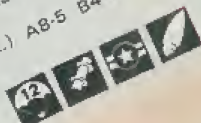
Astro Bee

1,200 feet with this sounding rocket style design.
Length: 14.75" (37.5 cm)
Wt. 823 oz. (23.3 g)
Engines: 1/2A6-2 A8-3 (1st Fit.) B4-4 B6-4 B8-5
C6-5 C6-7
No. 1356 \$3.00



Alpha III

Another great first or second kit. Plastic nose cone and fin assembly make for easy, quick assembly. This rocket will deliver outstanding performance flight-after-flight.
Length: 12.25" (31.1 cm)
Wt. 1.2 oz. (33.9 g)
Engines: 1/2A6-2 A8-3 (1st Fit.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
No. 1256 \$4.00



Sky Hook

An excellent kit for your second rocket. Easy-to-build with terrific performance flight-after-flight.
Length: 12" (30.5 cm)
Wt. 0.7 oz. (20 g)
Engines: 1/2A6-2 (1st Fit.) A8-3 A8-5 B4-4 B6-4 B8-5 B8-7 B14-5 B14-7 C6-5 C6-7
No. 1208 \$3.25



Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 8 oz.

NEW!

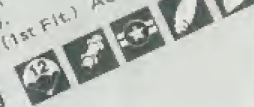
SPIN FIN

Unique spin-flight design creates dramatic curling smoke trail on its way up. Spectacular flights over 1,200 feet with 30" streamer recovery. Length: 11.6" (29.5 cm)
Wt. 6 oz. (17 g)
Engines: 1/2A6-4 A8-5 (1st Fit.) B4-6 B6-6 C6-7
No. 1355 \$2.25



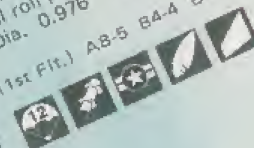
POLARIS

Sleek sounding rocket design with large payload section. Excellent performance for flights over 1,000 feet. Perfect for small insect payloads.
Length: 18" (45.7 cm)
Wt. 1.3 oz. (37 g)
Engines: 1/2A6-2 A8-3 (1st Fit.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
No. 1324 \$5.00



ICARUS

High altitude payload vehicle with see-through cargo section. Achieve flights of over 1,000 feet with lightweight payload. Simulated sounding rocket appearance with dual roll pattern decor.
Length: 20.8" (52.8 cm)
Wt. 1.3 oz. (37 g)
Engines: 1/2A6-2 A8-3 (1st Fit.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
No. 1277 \$5.25



QUASAR

Dramatic, easy-to-build model for beginners. Bright white plastic nose cone and fin assembly. Metallized-pre-printed mylar wrap-on decal for the body tube. No painting required! Length: 14" (35.6 cm) Dia. 0.976" (24.8 mm) Wt. 1.5 oz. (42 g.)
 ENGINES: 1/2A6-2 A8-3 (1st Flt.) B4-2 B4-4 B6-2 B6-4 B8-5 B14-5 C6-5
 No. 0650 \$5.00

Big Bertha

Perfect kit for a "big" second rocket. Ideal for demonstration launches. Slow, realistic lift-off for really spectacular flights. 24" from nose to tail. A real favorite of rocketeers. Length: 24" (61 cm) Dia. 1.637" (41.6 mm) Wt. 2.2 oz. (62.4 g.)
 ENGINES: A8-3 B4-2 B4-4 B6-2 (1st Flt.) B6-4 B8-5 B14-5 C6-5
 No. 1223 \$6.25

ANTARES

Achieve flights over 1,200 feet with this high performance sports model. Very easy-to-assemble. Length: 14.6" (37.1 cm) Dia. 0.976" (24.8 mm) Wt. 0.77 oz. (22 g.)
 ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
 No. 1276 \$4.50



SCAMP

Great sports flier with sleek, high performance design. Flights over 1,000 feet with "C" type engine. Length: 13.75" (34.9 cm) Dia. 0.976" (24.8 mm) Wt. 0.8 oz. (23 g.)
 ENGINES: 1/2A6-2 (1st Flt.) A8-3 A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
 No. 1286 \$4.75

GAMMA

Super-sport design for great performance. Attain altitudes over 1,000 feet with "C" type engines. Unique two-piece body construction for simplified two-color paint scheme. Length: 20.1" (51.1 cm) Dia. 0.976" (24.8 mm) Wt. 1.13 oz. (32 g.)
 ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
 No. 1325 \$5.00



COMET

High performance sport flier over 2 feet long. Quick and easy-to-assemble. Delivers great flights over 1,200 feet. Length: 24.25" (61.6 cm) Dia. 1.325" (33.7 mm) Wt. 1.8 oz. (51 g.)
 ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 C6-5 C6-7
 No. 1368 \$4.00

Engines, Launch System, Glue, and Finishing Supplies not included.
 Avg. Ship. Wt. 10 oz.

SKILL LEVEL 1

Mini- BRUTES



—Photo by David Brownell—

rogue Scale-like sounding research vehicle.
Excellent performance for great sport flying.
Length: 11.7" (29.7 cm) Dia. 0.736" (18.7 mm)
Wt. 0.76 oz. (21.26 g).
ENGINES: 1/4A3-2T (1st Flt.) 1/2A3-2T A3-4T
A10-3T
No. 0818 \$3.50

STAR DART High performance, mini-engine powered sport rocket. Flies over 1,000 feet and returns via streamer recovery. Very easy-to-assemble.
Length: 8.4" (21.3 cm) Dia. .541" (13.7 mm)
Wt. .225 oz. (6.4 g).
ENGINES: 1/4A3-2T (1st Flt.) 1/4A3-4T 1/2A3-4T
A3-6T
No. 0860 \$1.75

mini Bertha A little sister to the famous Big Bertha listed on page 20. Great performance with colorful 10" parachute recovery. Length: 11.26" (28.58 cm) Dia. 0.736" (18.69 mm) Wt. 0.484 oz. (13.72 g).
ENGINES: 1/2A3-2T (1st Flt.) A3-4T A10-3T
No. 0803 \$3.25

NEW!
SARK Achieve flights over 1,000 feet with the S.A.R.K. space probe. Easy-to-assemble with streamer recovery.
Length: 11.13" (28.3 cm) Dia. .541" (13.7 mm) Wt. 0.5 oz. (13.3 g).
ENGINES: 1/2A3-2T 1/2A3-4T A3-2T (1st Flt.) A3-4T
No. 0861 \$2.50

LITTLE JOHN Authentic appearance of a semi-scale surface-to-surface military vehicle with U.S. Army decor. Length: 14.0" (35.6 cm) Dia. 0.976" (24.8 mm) Wt. 0.875 oz. (24.7 g).
ENGINES: 1/2A3-2T (1st Flt.) A3-4T A10-3T
No. 0819 \$4.00

eclipse Reach altitudes over 600 feet with this great, Mini-Brute sport flier. Very high performance design. Length: 12.1" (30.73 cm) Dia. 0.736" (18.69 mm) Wt. 0.51 oz. (14.5 g).
ENGINES: 1/4A3-2T 1/2A3-2T (1st Flt.) 1/2A3-4T A3-4T A3-6T A10-3T
No. 0846 \$3.50

Engines, Launch System,
Glue, and Finishing Supplies
not included.
Avg. Ship. Wt. 6 oz.

SKILL LEVEL

1

Mini-BRUTES

MOSQUITO The smallest of all Mini-Brutes combines fantastic performance with feather-weight recovery. Balsa and paper construction with simple spray paint decor makes for quick-and-easy assembly.
Length: 3.9" (9.9 cm) Dia. 0.541" (13.74 mm)
Wt. 0.1 oz. (2.83 g).
ENGINES: 1/4A3-2T (1st Fit.) 1/4A3-4T 1/2A3-4T A3-6T A10-3T
No. 0801 \$.99

TWO FOR THE PRICE OF ONE!
SUPER FLEA & JAVELIN ONLY \$4.00

Javelin Super performance, easy-to-build competition design with streamer recovery. Scale-like sounding rocket appearance. Reaches altitudes over 1,000 feet. Length: 12.4" (31.5 cm) Dia. 0.541" (13.74 mm) Wt. 0.34 oz. (9.6 g).
ENGINES: 1/4A3-2T (1st Fit.) 1/2A3-2T A3-4T A10-3T
JAVELIN & SUPER FLEA COMBO KIT
No. 0815 \$4.00

Super Flea The "Flea's" competition design gives ultra-high performance. Reaches incredible altitudes with ogive nose cone and swept fins. Easy-to-build and features break-away drag recovery. Length: 7.34" (18.64 cm) Dia. 0.541" (13.74 mm) Wt. 0.158 oz. (4.5 g).
ENGINES: 1/4A3-2T (1st Fit.) 1/2A3-2T 1/2A3-4T A3-4T A10-3T

Screamer Another super performer featuring spectacular streamer recovery. She screams off the pad. "Don't Blink" or you'll miss her. Length: 7.8" (19.81 cm) Dia. 0.541" (13.74 mm) Wt. 0.255 oz. (7.23 g).
ENGINES: 1/4A3-2T (1st Fit.) 1/4A3-4T 1/2A3-4T A3-6T A10-3T
No. 0802 \$3.50

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 6 oz.

SKILL LEVEL

2

Mini-BRUTES

NEW!

A.S.P. Mini-engine powered, semi-scale model of famous atmospheric sounding projectile. Features spinners for realistic spin-flight performance. Length: 20.5" (52.1 cm) Dia. .736" (18.7 mm) Wt. .82 oz. (23 g).
ENGINES: 1/4A3-2T 1/2A3-4T (1st Fit.) A3-4T A10-3T
No. 0862 \$3.00

BETA Two-stage Mini-Brute for really high flights. Low-drag design with sounding rocket style decor. Booster stage has tumble recovery while top stage returns via parachute. Pat. No. 3,392,302. Length: 13.78" (34.95 cm) Dia. 0.736" (18.69 mm) Wt. 0.75 oz. (21.3 g).
ENGINES: UPPER STAGE 1/4A3-2T (1st Fit.) 1/2A3-4T A3-6T A10-3T BOOSTER STAGE 1/2A3-0T (1st Fit.) A3-0T A10-0T
No. 0845 \$3.75

SKILL LEVEL

3

Mini-BRUTES

NEW!

ESTES STARLINER Futuristic Estes version of a commercial space transport ship of the 21st Century. Mini-engine powered for low cost flights. Length: 12.6" (32 cm) Dia. .736" (18.7 mm) Wt. .9 oz. (25 g).
ENGINES: 1/2A3-2T (1st Fit.) A3-2T A3-4T A10-3T
No. 0863 \$3.00



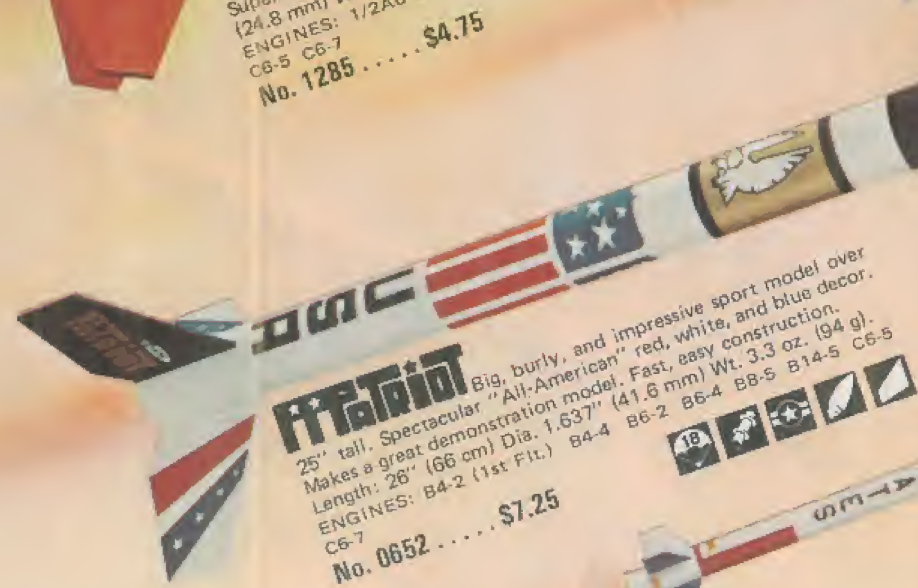
Challenger-II High performance "D" engine powered sport model. Easy-to-assemble and fly in less than one hour. No painting required with black plastic fin-unit, yellow nose cone, and pre-colored white body tube. Recommended high altitude launch vehicle for the AstroCam 110 Aerial Camera (see page 2). Take fantastic aerial photos from over 1,200 feet. (AstroCam 110 Camera not included.) Length: 24.25" (61.6 cm) Dia. 1.34" (34 mm) Wt. 3.0 oz. (86 g). ENGINES: D12-7 (1st Flt.) D11-9 No. 1330 \$6.50

ESTES



Teros Authentic anti-aircraft missile styling with U.S.A.F. decor. Exciting scramjet design with ramjet nose. Super sports model. Length: 13" (33.0 cm) Dia. 0.976" (24.8 mm) Wt. 1.2 oz. (33.9 g). ENGINES: 1/2A6-2 (1st Flt.) A8-3 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7 No. 1285 \$4.75

U.S. AIR FORCE



Patriot Big, burly, and impressive sport model over 25" tall. Spectacular "All-American" red, white, and blue decor. Makes a great demonstration model. Fast, easy construction. Length: 26" (66 cm) Dia. 1.637" (41.6 mm) Wt. 3.3 oz. (94 g). ENGINES: B4-2 (1st Flt.) B4-4 B6-2 B6-4 B8-5 B14-5 C6-5 C6-7 No. 0652 \$7.25



BLACK BRANT III Sounding scale model of the primary research vehicle produced by Bristol Aerospace. An excellent choice for your first scale project. Simple construction with "C" engine. Length: 20.6" (52.3 cm) Dia. .976" (24.8 mm) Wt. 1.06 oz. (30 g). ENGINES: 1/2A6-2 A8-3 (1st Flt.) B8-5 B14-5 C6-5 C6-7 No. 1293 \$5.25

BLACK BRANT III



SAM-4 Scale-like surface-to-air missile with two-stage appearance. Excellent flights to 900 feet. Length: 18.2" (46.2 cm) Dia. .976" (24.8 mm) Wt. 1.1 oz. (31.1 g). ENGINES: A8-3 B4-2 B4-4 (1st Flt.) B6-2 B6-4 B8-5 C5-3 C6-3 C6-5 No. 1357 \$4.50

NEW!



NOMAD Super long scale-like surface-to-surface missile with ICBM decor. Nearly 4 feet tall, this big bird is easy-to-assemble with plastic nose cone, adapter section and fin-unit. Features a really long payload section. Length: 44.25" (112.4 cm) Dia. .976" (24.8 mm) Wt. 1.48 oz. (42 g). ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 B14-5 C6-5 C6-7 No. 1344 \$5.50

NEARLY 4 FEET LONG!



Engines, Launch System, Glue, and Finishing Supplies not included. Avg. Ship. Wt. 10 oz.

PHOTON DISRUPTOR

Equip your star fleet with this sophisticated scale missile from the 23rd century. Designed as a mass conversion weapon to overload the defensive screens of an enemy vessel, the actual Photon Disruptor may also be used as an interceptor missile, a proximity space mine, or a distress signal.

Length: 18.25" (46.4 cm) Dia. 0.976" (24.8 mm) Wt. 1.4 oz. (40 g).

ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5

No. 1282 \$5.25

Sriletto

Exciting scale-like surface-to-air interceptor missile with realistic performance with two-stage engines.

Length: 22.4" (56.9 cm) Dia. 0.976" (24.8 mm)

ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 B14-5 C6-5

No. 1323 \$5.00

Odyssey

This unique interstellar spacecraft is conceived to perform a variety of space rescue, exploratory, or intruder intercept missions. Impulse power unit jettisons after lift-off from planetary launch site. Its two-man crew and engineering section are then accelerated to near-light velocities for rendezvous and space rescue operations. Our version features super-detailed plastic nose section.

Length: 24.1" (61.21 cm) Dia. 1.325" (33.7 mm) Wt. 2.40 oz. (68 g).

ENGINES: B4-4 B6-4 (1st Flt.) B8-5 B14-5 C6-5

No. 1289 \$6.25

RUSSIAN SCUD-B

Impressive 1/20.4 scale model of the Russian medium range surface-to-surface missile. Scud-B is the NATO code name designated for this missile which is deployed by all the armies of the Warsaw Pact countries. This realistic kit is easy-to-assemble. Build it sport-scale or true-scale. A superb flyer and perfect military model for the beginner or advanced rocketeer.

Length: 21.7" (55.1 cm) Dia. 1.637" (41.6 mm)

ENGINES: B4-2 B4-4 B6-4 (1st Flt.) B8-5 B14-5 C6-5 C6-7

No. 1340 \$5.50

RED MAX

Far-out super-fun model. Large stable design gives great sport performance.

Length: 16.25" (41.3 cm) Dia. 1.637" (41.6 mm) Wt. 2.38 oz. (67 g).

ENGINES: B4-2 (1st Flt.) B4-4 B6-2 B6-4 B8-5 C6-5 B14-5 C6-7

No. 0651 \$6.25

NIKE-X

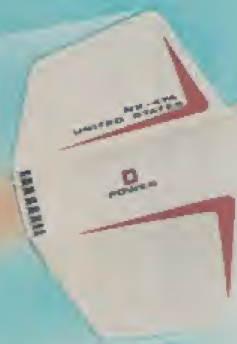
Scale-like single-stage model of U.S. Army's 4th generation, two-stage surface-to-air missile. Nike-style design with U.S. Army decor. Great performance for really impressive flights. Easy-to-assemble.

Length: 23.4" (59.4 cm) Dia. 1.325" (33.7 mm) Wt. 2.3 oz. (65 g).

ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 B14-5 C6-5

No. 1270 \$6.25

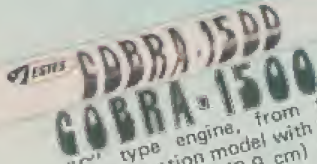
Engines, Launch System,
Glue, and Finishing Supplies
not included.
Avg. Ship. Wt. 11 oz.



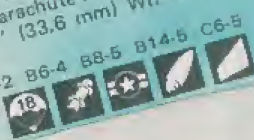
CHEROKEE-D Sleek and powerful "D" engine rocket that will practically sail out-of-sight. Big 18" chute brings it down safely flight-after-flight. A really beautiful model for your first "D" powered kit. Length: 21.6" (54.9 cm) Dia. 1.325" (33.7 mm) Wt. 2.75 oz. (78 g).
 ENGINES: D11-9 D12-5 (1st Flt.) D12-7
 No. 1247 \$6.25



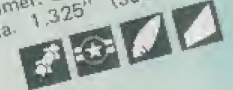
NEARLY 5 FEET LONG!



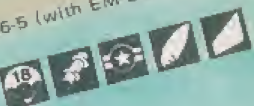
COBRA-1500 Attain flights over 700 feet, with "C" type engine, from this extra long sport flier. Perfect demonstration model with large 18" parachute recovery. Length: 59" (149.9 cm) Dia. 1.325" (33.6 mm) Wt. 3.17 oz. (90 g).
 ENGINES: B4-2 B4-4 (1st Flt.) B6-2 B6-4 B8-5 B14-5 C6-5
 No. 1294 \$6.50



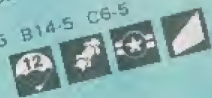
SKYBOLT Super "D" engine powered high performance sport model. Spectacular flights over 1,000 feet plus dramatic recovery with 90" streamer. Easy-to-assemble and finish. Length: 23" (58.4 cm) Dia. 1.325" (33.6 mm) Wt. 1.75 oz. (50 g).
 ENGINES: D11-9 D12-7 (1st Flt.)
 No. 1334 \$4.50



SKY RAIDER Flights up to 1,600 feet are possible with this big "D" engine powered payload. Great sports model with large payload section. Length: 32.75" (83.2 cm) Dia. 1.325" (33.7 mm) Wt. 2.39 oz. (67.8 g).
 ENGINES: D12-5 D12-7 (1st Flt.) C6-5 (with EM-2050 adapter not included. See page 61.)
 No. 1290 \$6.25

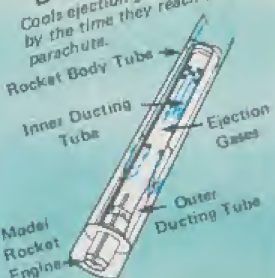


BANDIT Features advanced ejection ducting system. It never needs recovery wadding! High performance design and military style appearance makes the Bandit a really impressive bird. Over 25" long with large payload section. Length: 27.75" (65.4 cm) Dia. 1.325" (33.6 mm) Wt. 2.6 oz. (73.7 g).
 ENGINES: A8-3 B4-4 B6-4 (1st Flt.) B8-5 B14-5 C6-5
 No. 1248 \$7.25



BANDIT'S ADVANCED EJECTION DUCTING SYSTEM

Cools ejection gases completely by the time they reach your parachute.



Engines, Launch System, Glue, and Finishing Supplies not included.
 Avg. Ship. Wt. 11 oz.

NEW!

ORBITAL INTERCEPTOR

Exotic short range interceptor designed for orbital patrol and larger starship escort. Spectacular flights over 1,200 feet. Length: 17" (43.2 cm) Dia. .976" (2.5 mm) Wt. 1.5 oz. (42 g).
 ENGINES: 1/2A6-2 A8-3 (1st Flt.) B4-4 B6-4 B8-5 C5-3 C6-5
 No. 1359 \$3.75



Star Speeder

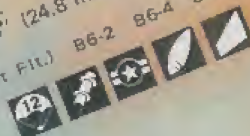
Single place galactic fighter capable of tremendous speed and maneuverability. The Estes version sports great performance with flights over 800 feet. Length: 13.75" (34.9 cm) Dia. .736" (18.7 mm) Wt. 1.3 oz. (35 g).
 ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 C6-5
 No. 1366 \$4.00



NEW!

F-61 STARFIGHTER

Futuristic starfighter design with plastic cockpit canopy and simulated air-to-air missiles, laser cannons, and infra-red photon torpedos. Great flights up to 900 feet. Length: 18.75" (47.6 cm) Dia. .976" (24.8 mm) Wt. 1.1 oz. (31.8 g).
 ENGINES: A8-3 B4-2 B4-4 (1st Flt.) B6-2 B6-4 B8-5 C5-3 C6-3 C6-5
 No. 1358 \$4.50



NEW!



Features
 NEW **SKYLITE**
 skinned foam plastic
 parts for easy, quick
 assembly!

"Fly Model Rocketry's Largest Scale Space Shuttle Orbiter!" NASA SPACE SHUTTLE ORBITER

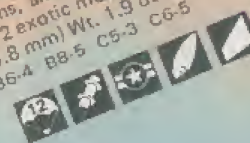
Dramatic 1/87th semi-scale (H.O. Scale) NASA Space Shuttle with revolutionary new "SkyLite" skinned foam plastic construction. Easily assembled with molded plastic nose cone, vertical stabilizer fin, rear fuselage, and engine nozzle detail which removes to Earth via huge 18" recovery parachute. Length: 15-1/4" (39 cm) Wing Span 10" (25 cm) Wt. 3.75 oz. (106 g).
 ENGINES: B4-2 (1st Flt.) B6-2 C5-3 C6-3
 No. 1337 \$13.00



NEW!

STELLAR FORCES Skytracer

Interplanetary fighter craft designed with dual directional thrusters, wing mounted laser cannons, and dramatic nose cone. A challenging Skill Level 2 exotic model. Length: 13" (33 cm) Dia. .976" (24.8 mm) Wt. 1.9 oz. (54 g).
 ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 C5-3 C6-5
 No. 1361 \$5.00



Engines, Launch System,
 Glue, and Finishing Supplies
 not included.
 Avg. Ship. Wt. 12 oz.

SKILL LEVEL

2

MaxiKarus Huge super "D" engine powered payload model with large see-thru cargo section. Delivers spectacular flights over 1,000 feet. Over 6 cubic inches or up to 80 grams of payload capacity.
Length: 29.75" (75.5 cm) Dia. 1.64" (41.6 mm) Wt. 3.2 oz. (90 g).
ENGINE: D12-5
No. 1331 \$9.00

Mean Machine Tallest rocket in the Estes fleet. "D" engine powered for spectacular flights over 800 feet. Over 6 feet long with giant 24" chute. Easy-to-assemble for a really great looking bird. Uses 3/16" launch rod. Length: 78.75" (200 cm) Dia. 1.637" (41.6 mm).
Wt. 5.8 oz. (164 g).
ENGINE: D12-5
No. 1295 \$10.00

**OVER
6 FEET
TALL!**

**NEARLY
3 FEET TALL!**

**maxi
alpha**

Very easy-to-assemble giant scale version of one of our most popular kits. Can be ready-to-launch in approximately 30 minutes. Features new press-fit plastic fin-unit, plus plastic nose cone. "D" engine powered for truly spectacular flights up to 500 feet. Perfect for demonstrations. No painting required! Uses 3/16" launch rod.
Length: 33.25" (84.46 cm) Dia. 2.6" (66.04 mm) Wt. 7.4 oz. (210 g).
ENGINE: D12-3
No. 1321 \$12.50

**PERFECT FOR
DEMONSTRATIONS!**

COLOSSUS

Huge addition to our Maxi-Brute fleet. Over 4 feet long with big plastic nose cone and press-fit plastic fin-unit. Quick and easy-to-assemble. Really spectacular "D" powered flights with slow realistic lift-off. No painting required! Uses 3/16" launch rod.
Length: 51.25" (130.18 cm) Dia. 2.6" (66.04 mm) Wt. 9.52 oz. (270 g).
ENGINE: D12-3
No. 1326 \$19.00

**OVER
4 FEET
TALL!**

BLUE BIRD ZERO

Experimental sounding design over 3 feet tall. Easy-to-assemble. Delivers high performance flights and gentle recoveries with big 18" recovery chute.
Length: 39.75" (101 cm) Dia. 1.325" (33.7 mm) Wt. 2.7 oz. (76 g).
ENGINES: B4-2 B4-4 B6-2 B6-4 (1st Flt.) B8-5 B14-5 C6-5 C6-7
No. 1335 \$6.50

Engines, Launch System,
Glue, and Finishing Supplies
not included.
Avg. Ship. Wt. 15 oz.



Multi-Stagers

Multi-staging is the next step in expanding your model rocketry skills. Each kit demonstrates how real spaceships operate. The first stage is always ignited electrically. Second stage ignition occurs automatically in mid-flight upon burnout of the first stage. Performance and maximum altitude are dramatically increased thru multi-staging.



DELTA STAR Really sleek, super high performance two-stage payload capable of lofting a 1 oz. payload over single or multi-stage. Booster stage employs tumble recovery. Length: 24" (61 cm) Dia. .98" (24.9 mm) Wt. 1.13 oz. (32 g).

ENGINES: SINGLE STAGE A8-3 (1st Flt.) B4-4 B6-4 B8-6 B8-7 B14-5 C6-5 C6-7 UPPER STAGE B6-4 B8-6 B8-7 B14-5 C6-5 C6-7 BOOSTER STAGE A8-0 (1st Flt.) B6-0 B8-0 C6-0

No. 1322 \$6.00

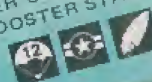
NEW!



Scorpion High flying two-stage sport model with all plastic fin styling. Easy-to-build and exciting to fly with all plastic fin units. Booster employs tumble recovery while upper stage streaks skyward to altitudes over 1,000 feet. Length: 26.5" (67.3 cm) Dia. .976" (24.8 mm) Wt. 1.8 oz. (52 g).

ENGINES: SINGLE STAGE A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B8-6 B8-7 B14-5 C6-5 C6-7 UPPER STAGE A8-5 (1st Flt.) B4-6 B6-6 B8-7 B14-7 C6-7 BOOSTER STAGE A8-0 (1st Flt.) B6-0 B8-0 B14-0 C6-0

No. 1333 \$5.50



AVENGER

Long, slender lines give this bird the sounding rocket look. Large 18" chute brings payload section back gently. booster employs tumble recovery. Length: 32" (81.3 cm) Dia. 1.325" (33.7 mm) Wt. 2.7 oz. (77 g).

ENGINES: UPPER STAGE A8-5 B4-6 B6-6 (1st Flt.) B8-7 B14-7 C6-7 BOOSTER STAGE A8-0 B6-0 (1st Flt.) B8-0 B14-0 C6-0

No. 1238 \$6.25

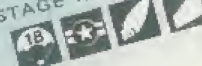


Vigilante

Ultra-high performance two-stage model returns via 18" parachute while the booster employs tumble/recovery. Length: 26.5" (67 cm) Dia. 1.325" (33.6 mm) Wt. 2.25 oz. (64 g).

ENGINES: UPPER STAGE 1/2A6-4 A8-5 (1st Flt.) B4-6 B6-6 B8-7 B14-7 C6-7 BOOSTER STAGE 1/2A6-0 A8-0 (1st Flt.) B6-0 B8-0 B14-0 C6-0

No. 1278 \$6.25



Engines, Launch System, Glue, and Finishing Supplies not included. Avg. Ship. Wt. 12 oz.

NEW!

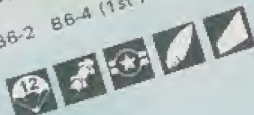
Star ship NOVA Truly awesome in appearance, this inter-galactic explorer is believed to be outfitted with both conventional atomic engines and hyper-space starflight drive. Heavily armed with multiple phaser banks, photon torpedos, and energy deflection shields, the Nova is prepared to meet any foe. The Estes version of the magnificent starship is perfect for demonstrations and really great for display.

Length: 19.75" (50.2 cm) Dia. .976" (24.8 mm)
Wt. 2.3 oz. (65 g.)
ENGINES: B4-2 (1st Fit.) B6-2 C5-3 C6-3
No. 1371 \$6.00

alien explorer Incredible alien starship believed to be from a distant galaxy. Is it friend or foe? Its size and unique appearance make it a most dramatic demonstration and display model. Really spectacular lift-off and recovery. Length: 45" (114.3 cm) Dia. .976" (24.8 mm) Wt. 2.43 oz. (68.8 g.)
ENGINES: B6-2 B6-4 (1st Fit.) B8-5 C6-5
No. 1372 \$7.50

NEW!

WORLD FEDERATION STAR PROBE Our engineer's conception of deep space exploratory craft. Powered by atom fueled Nerva thrusters, this futuristic interplanetary voyager utilizes advanced "Loop-Fin" stabilization. Its mission is to peacefully seek-out and discover other life forms. Unique "Loop-Fin" design delivers spectacular flights. Length: 31" (78.7 cm) Dia. .976" (24.8 mm) Wt. 2.5 oz. (70 g.)
ENGINES: A8-3 B4-2 B4-4 B6-2 B6-4 (1st Fit.) B8-5 B14-5 C6-5 C6-7
No. 1341 \$6.50



NEARLY 4 FEET LONG!

ORION STARFIGHTER Perimeter defense starfighter for the Orion cluster. Outfitted with white plasma energy shield and Estegon crystal engines for star-streak acceleration. Length: 20.25" (51.44 cm) Dia. .976" (24.81 mm) Wt. 1.115 oz. (31.6 g.)
ENGINES: A8-3 B4-2 B4-4 (1st Fit.) B6-2 B6-4 B8-5 B14-5 C6-5 C6-7

SUPER VALUE!
STARFIGHTER COMBO KIT
Orion StarFighter
and
Torellian Invader

These science fiction kits deliver great flights and are terrific display models

TORELLIAN INVADER Galactic invader and primary attack fighter from the Torellian Empire. Capable of deploying Zarchronian space mines and launching photon torpedos. Length: 20" (50.8 cm) Dia. .976" (24.8 mm) Wt. 1.291 oz. (36.6 g.)
ENGINES: A8-3 B4-2 B4-4 (1st Fit.) B6-2 B6-4 B8-5 B14-5 C6-5 C6-7
ORION STARFIGHTER & TORELLIAN INVADER COMBINATION KIT
No. 1343 \$9.00



Engines, Launch System,
Glue, and Finishing Supplies
not included.
Avg. Ship. Wt 12 oz.



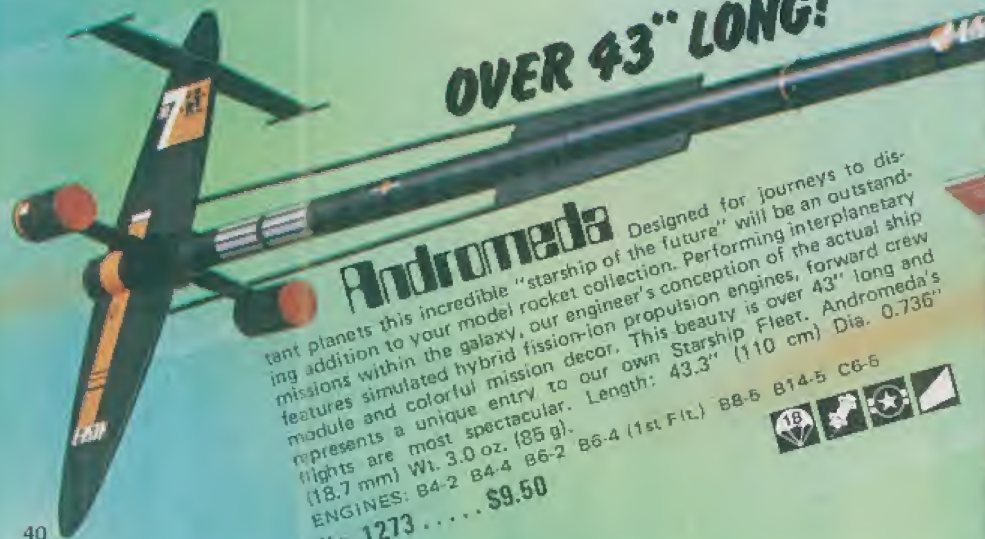
Satellite Interceptor

Envisioned by designers to be operational by 1990, this ultra-sophisticated interceptor patrols near-space for possible aggression by hostile satellites. Highly advanced defense systems include both nuclear nose and exhaust cones. Flies over 600 feet. Length: 22.25" (56.5 cm) Dia. 0.976" (24.8 mm) Wt. 1.38 oz. (39 g).
 ENGINES: 1/2A6-2 A8-3 B4-4 (1st Fit.) B6-4 B8-5 B14-5 B14-7 C6-5 C6-7
 No. 1296 \$5.25



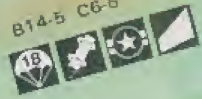
NEW!

OVER 43" LONG!

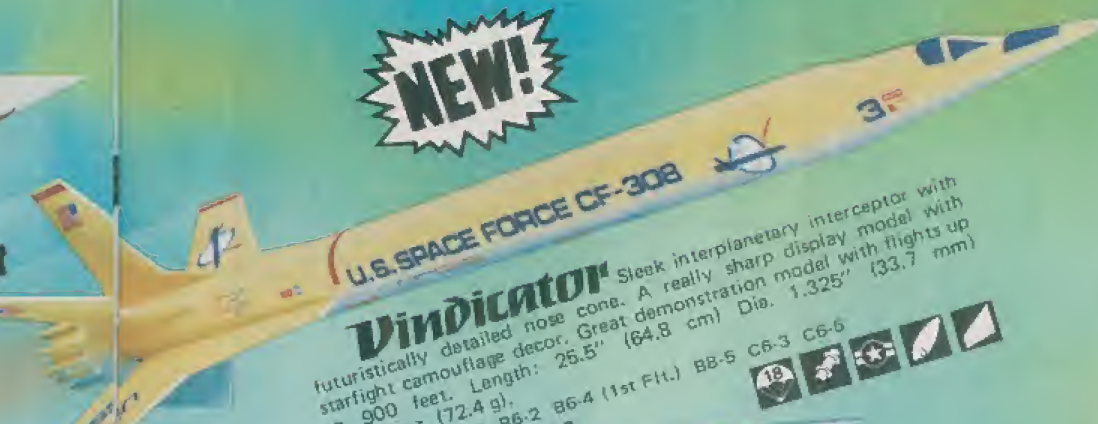


Andromeda

Designed for journeys to distant planets this incredible "starship of the future" will be an outstanding addition to your model rocket collection. Performing interplanetary missions within the galaxy, our engineer's conception of the actual ship features simulated hybrid fission-ion propulsion engines, forward crew module and colorful mission decor. This beauty is over 43" long and represents a unique entry to our own Starship Fleet. Andromeda's flights are most spectacular. Length: 43.3" (110 cm) Dia. 0.736" (18.7 mm) Wt. 3.0 oz. (85 g).
 ENGINES: B4-2 B4-4 B6-2 B6-4 (1st Fit.) B8-5 B14-5 C6-5
 No. 1273 \$9.50

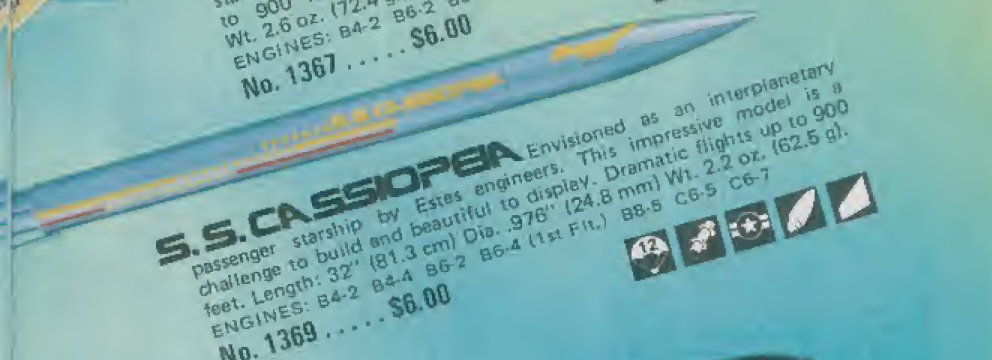
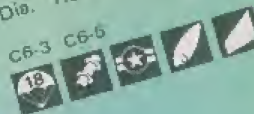


NEW!



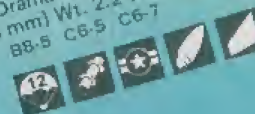
Vindicator

Sleek interplanetary interceptor with futuristic detailed nose cone. A really sharp display model with starflight camouflage decor. Great demonstration model with flights up to 900 feet. Length: 25.5" (64.8 cm) Dia. 1.325" (33.7 mm) Wt. 2.6 oz. (72.4 g).
 ENGINES: B4-2 B6-2 B6-4 (1st Fit.) B8-5 C6-3 C6-6
 No. 1367 \$6.00



S.S. CASSIOPEA

Envisioned as an interplanetary passenger starship by Estes engineers. This impressive model is a challenge to build and beautiful to display. Dramatic flights up to 900 feet. Length: 32" (81.3 cm) Dia. .976" (24.8 mm) Wt. 2.2 oz. (62.5 g).
 ENGINES: B4-2 B4-4 B6-2 B6-4 (1st Fit.) B8-5 C6-5 C6-7
 No. 1369 \$6.00



SPACE TRANSPORTER AMERICA

Scale-like model suggests America's future "single-stage-to-orbit" (SSTO) concept. Gigantic space booster will carry huge payloads into Earth orbit and then return like an airplane. Kit includes plastic nose cone and display tail unit with scale engine nozzles. Really impressive flights. Length: 21.75" (55.3 cm) Dia. 1.637" (41.6 mm) Wing Span 7.0" (17.8 cm) Wt. 2.5 oz. (70 g).
 ENGINES: B4-2 B6-4 (1st Fit.) C6-5
 No. 1338 \$7.75



Glue, and Finishing Supplies not included.
 Avg. Ship. Wt. 14 oz.

"The Good Guy"

GALACTIC PIRATES™

"The Bad Guy"

EXCALIBUR

Patrol Cruiser. Sleek and powerful, the Excalibur is the pride of the Intergalactic Patrol. Hidden in the ship's nose, on a retractable carriage is a quad mounted, choke barrel, Hyper-Ballistic Vacuum Gun. Speeds in the Star-Fall category are possible and range is reported to be 63 billion miles without refueling. Our scale model of this heroic spaceship delivers really spectacular flights.

Length: 20.125" (51.1 cm) Dia. 1.637" (41.6 mm)
 Wt. 2.3 oz. (66 g.)
 ENGINES: A8-3 B4-4 (1st Flt.) B6-4 C5-3 C6-3
 No. 1339 \$7.75

DRAGON SHIP 1

Dreaded Dragonship of the Outlaw Galactic Pirate Confederacy. Dragonship 7, based on the asteroid Greb-Sing is an outstanding example of evil technical genius. The ship's Twin Hydron-Stethode Cannon furnish a firepower of the Seventh Magnitude. This alien marauder from deep space is aptly named and universally feared. The Estes model, Length: 16.75" (42.5 cm) Dia. 1.637" (41.6 mm) Wt. 2.7 oz. (77 g.)
 ENGINES: A8-3 B4-4 (1st Flt.) B6-4 B8-5 B14-5 C6-6
 No. 1345 \$7.75

STARSHIP VEE

Exotic planetary exploration vehicle featuring simulated landing shocks. Science fiction styling gives this bird a real spaceship look. Comes ready-to-assemble with die-cut parts and two-color decals. Length: 19.5" (49.5 cm) Dia. 0.976" (24.8 mm) Wt. 1.88 oz. (53 g.)
 ENGINES: A8-3 B4-2 B4-4 B6-2 B6-4 (1st Flt.) B8-5
 No. 1320 \$7.25

Engines, Launch System, Glue, and Finishing Supplies not included.
 Avg. Ship. Wt. 12 oz.

STARBLAZER X-20

Envisioned as a mainstay in the space arsenal of the U.N. Earth Forces, the Starblazer X-20 is utilized for daily patrol and emergency intercept missions in Earth's outer atmosphere. This model sports great performance and exciting recoveries.

Length: 19.25" (48.9 cm) Dia. .976" (24.8 mm) Wt. 1.12 oz. (31.7 g.)
 ENGINES: A8-3 (1st Flt.) A8-5 B4-2 B4-4 B6-2 B6-4 B6-6 B8-5 B8-7 B14-5 B14-7 C6-5 C6-7
 No. 1342 \$4.50

TIGER

Very exotic, two-stage, interplanetary voyager. Features highly detailed futuristic nose cone, plus simulated touch-down struts. Envisioned as a deep space research vehicle of the 21st Century.

Length: 26.6" (67.6 cm) Dia. 1.325" (33.7 mm) Wt. 2.7 oz. (77 g.)
 ENGINES: SINGLE STAGE A8-3 B4-4 B6-4 (1st Flt.) B8-5 C6-5 UPPER STAGE A8-5 (1st Flt.) B4-6 B6-6 B8-7 C6-7
 BOOSTER STAGE A8-0 (1st Flt.) B6-0 B8-0 C6-0
 No. 1363 \$7.00

SCISSOR-WING TRANSPORT

This exciting bird introduces the revolutionary new Scissor-Wing concept. Features super SST styling and high flight reliability. Capable of glide times of more than 60 seconds. Internal ejection power pod features vertical stabilizer fins. Comes ready-to-assemble with die-cut parts and two-color decals. Length: 22.75" (57.7 cm) Body Dia. 0.976" (24.8 mm) Wing Span 16" (40.6 cm) Wt. w/pod 2.5 oz. (71 g.)
 ENGINES: B4-2 (1st Flt.) B6-2 C5-3 C6-3
 No. 1265 \$8.50

NEW!

SKILL LEVEL

3



Goblin Powerful and fast, this spooky little kit really gets up and moves. You'll need a good more flight-after-flight with single "D" engine. Dramatic recovery with big, 2" wide, bright orange tracking streamer. Length: 14.32" (36.3 cm) Dia. 1.325" (33.6 mm) Wt. 2.0 oz. (56.6 g).
ENGINES: D11-9 D12-7 (1st Flt.) (A8-3, B4-4, B6-4, B8-5, B14-5, C6-5, and C6-7 with adapter EM-2050, not included. See page 62.)
No. 1255 \$6.25



SEA STRIKE Scale-like ship-to-air missile with two-stage upper stage. High performance design for incredible 1,800 foot flights. Realistic military appearance. Features tumble recovery booster and 12" parachute recovery for the upper stage. Length: 31" (78.75 cm) Dia. 1.34" (34 mm) Wt. 3.35 oz. (95 g).
ENGINES: SINGLE STAGE D11-9 D12-5 (1st Flt.) D12-7 UPPER STAGE D11-9 D12-7 BOOSTER STAGE D12-0
No. 1332 \$7.75



GYROC "WITH HELICOPTER RECOVERY" An amazing and unique "helicopter" recovery system makes the Gyroc a must for your fleet. Lifts off with main fins in straight-away position. Engine's ejection charge allows rear fin tips to snap sideways causing rotor effect and helicopter recovery. Unusual appearance and strange performance are sure to catch the interest of on-lookers. Length: 9.8" (24.9 cm) Dia. 0.735" (18.7 mm) Wt. 0.6 oz. (17 g).
ENGINES: 1/2A6-2 (1st Flt.) A8-3 B4-4 B6-4 B8-5 B14-5 C6-5
No. 1224 \$3.25

Photo by David Brownell



Engines, Launch System, Glue, and Finishing Supplies not included.
 Avg. Ship. Wt. 10 oz.



MULTI-ROC Really exciting multi-purpose sport flyer featuring large payload section. Can be flown in eight different flight configurations. Payload section releases from upper stage rocket at apogee and is capable of glide times of more than 30 seconds. Booster section features pop-and-go staging plus tumble recovery. Length: 24.5" (62.2 cm) Dia. .98" (24.9 mm) Wt. 1.94 oz. (55 g) with glider.
ENGINES: SINGLE STAGE A8-3 B4-4 B6-4 B8-5 B14-5 B14-7 C6-5 UPPER STAGE A8-5 (1st Flt.) B4-6 B6-6 B8-7 C6-7 BOOSTER STAGE A8-0 (1st Flt.) B6-0 B8-0 C6-0
No. 1329 \$9.00



Scout The Scout is a four-stage solid-propellant launch vehicle used for orbital, probe and re-entry missions. Since its first mission in 1960, Scout has been the launch vehicle for more than 90 all NASA launch vehicles. We have chosen to scale the Italia version, known for its Uhura satellite which discovered the existence of "black holes" in space. This model is extremely detailed with many plastic parts. Length: 36.09" (91.67 cm) Dia. 1.637" (41.58 mm) Wt. 3.85 oz. (109 g).
ENGINE: C6-5
No. 1287 \$9.50



apogee II Ultimate in 2-stage performance and reliability. See-through payload section lets you observe specimens without removing them from the rocket. Features 12" parachute and tumbling re-entry booster. Includes Tech Report on Multi-Staging. Pat. No. 3,292,302. (Decals not included.) Length: 14.7" (37.4 cm) Dia. 0.736" (18.7 mm) Wt. 0.6 oz. (17 g).
ENGINES: UPPER STAGE 1/2A6-4 (1st Flt.) A8-5 B4-6 B6-6 B8-7 B14-7 C6-7 BOOSTER 1/2A6-0 (1st Flt.) A8-0 B6-0 B8-0 B14-0 C6-0
No. 1205 \$5.25

NEW!

TARTAR

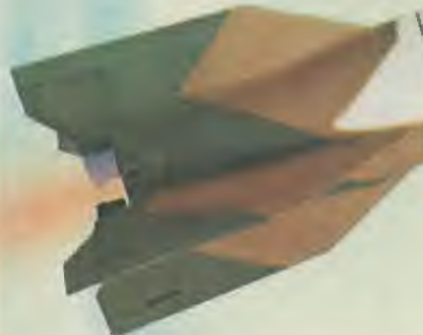
Semi-scale anti-aircraft missile manufactured by Convair Corp. for the U.S. Navy. Actual vehicle is also utilized for ship-to-ship bombardment. Length: 23.25" (59.1 cm) Dia. 1.325" (34 mm) Wt. 2.4 oz. (68 g).
ENGINES: A8-3 B4-4 (1st Flt.) B6-4 B8-5 C5-3 C6-3 C6-5
No. 1360 \$5.50

OVER 3 FEET LONG!

PERSHING-1A

This Maxi-Brute is a true scale model of the U.S. Army's surface-to-surface ballistic missile produced by Martin-Marietta and deployed with NATO units in Europe. Our 1/10 scale model is "D" engine powered with three color decals, pre-shaped fins, detailed molded plastic nose cone, and dual 24" parachute recovery. A 3/16" launch rod should be used for best lift-off results. The unusual fin configuration of this model makes it one of the most unique scale models ever to be offered. Additional historical background data is also included. Length: 41" (104.14 cm) Dia. 3.938" (100 mm) Wt. 11.5 oz. (326.03 g).
ENGINE: D12-3
No. 1268 \$24.95

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship, Wt. 32 oz.



FLYS TO 1600 FEET!

SPRINT

Highest performance in its class. Up to 1,600 ft. with C6-7 engine. Low drag ogive nose cone and reducer tail section. Contest winning elliptical fins, and streamer recovery. Length: 13.8" (35 cm) Dia. 0.976" (24.8 mm) Wt. 1.0 oz. (28 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-6 B6-6 B8-5 B8-7
No. 1249 \$4.50

OVER 3 FEET LONG!

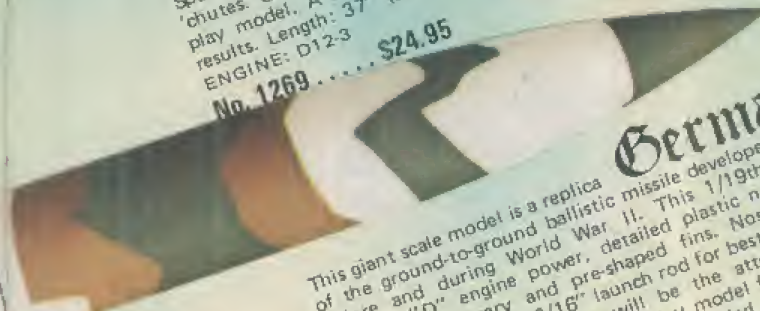
HONEST JOHN

1/9th scale model of the famous U.S. Army surface-to-surface, supersonic ballistic missile, one of the mainstays of the Army's atomic weapons capability. This highly detailed model uses a single "D" engine for power and comes with pre-shaped, accurately scaled fins and molded plastic nose cone. Spectacular recovery with giant, dual 24" orange and white canopy 'chutes. Great for demonstrations and perfect as an impressive display model. A 3/16" launch rod is recommended for best lift-off results. Length: 37" (94 cm) Dia. 2.6" (66 mm) Wt. 14 oz. (397 g).
ENGINE: D12-3
No. 1269 \$24.95

German V-2

This giant scale model is a replica of the ground-to-ground ballistic missile developed at Peenemunde before and during World War II. This 1/19th scale Maxi-Brute features "D" engine power, detailed plastic nose cone, dual 24" parachute recovery and pre-shaped fins. Nose cone fits BT-101 tube. Model requires 3/16" launch rod for best lift-off performance. This historic reproduction will be the attention-getter at your launch site, and a handsome display model for your desk or bookshelf. Historical background is also included with instructions. Length: 33.5" (85 cm) Dia. 3.938" (100 mm) Wt. 12.5 oz. (354.38 g).
ENGINE: D12-3
No. 1267 \$24.95

NEARLY 3 FEET TALL!



SKILL LEVEL 4



-NASA Photo

Orbital Transport

Only a gleam in the eye of NASA, but it's flying for Estes rocketeers right now! Astonishingly realistic recovery system where mothership returns to Earth via huge 18" parachute and interplanetary orbiter and near-space missions. Transport vehicle and glider fly piggy-backed and separate at apogee for spectacular dual recovery.

TRANSPORT SHIP Length: 23" (58.4 cm) Dia. 0.976" (24.8 mm) Wing Span 7.3" (20 cm) Wt. 2 oz. (56 g).

RE-ENTRY VEHICLE Length: 8.6" (21.8 cm) Dia. 0.736" (18.7 mm) Wing Span 5" (12.7 cm) Wt. 0.5 oz. (14 g).

ENGINES: B4-2 B4-4 B6-2 B6-4 (1st Fit.) B8-5 B14-5 C6-5

No. 1242 \$7.50



MERCURY REDSTONE

Famous NASA vehicle which boosted Commander Alan Shepard on America's first manned space flight. Beautifully scaled to 1/42nd actual size our Mercury Redstone features intricately detailed fin assemblies and escape tower. Launchings simulate real space missions as Mercury capsule returns via bright orange and white 12" parachute. Length: 23.5" (59.7 cm) Dia. 1.637" (41.6 mm) Wt. 2.1 oz. (60 g).

ENGINES: A8-3 B4-4 B6-4 (1st Fit.) B8-5 B14-5 C6-5

No. 1241 \$7.50

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 14 oz.

SKILL LEVEL 5



-NASA Photo

BOEING ALCM CRUISE MISSILE 1/14th Scale
The Boeing A.L.C.M. Cruise Missile is America's newest weapon system. Designed to be launched from a large aircraft, it can deliver a nuclear warhead with pinpoint accuracy. Once launched, the wings and fins provide high speed power to the missile. Sophisticated radar and on-board computer guide the Cruise Missile at tree-top altitudes. The Estes near-scale version of this vehicle is a challenging model with blow-molded plastic body, die-cut plastic fins & wings, and injection molded plastic parts. Wings swing-out for display. Length: 12.3" (31.2 cm) Wing Span 7.75" (19.69 cm) Wt. 2.79 oz. (78.8 g).

ENGINES: A8-3 B4-4 (1st Fit.) B6-4 B8-5 B14-5 C6-5

No. 1336 \$9.00

SKILL LEVEL 5

MARS LANDER

Displays futuristic concept for a planetary exploration and landing vehicle. Spring-loaded landing gear simulates realistic upright touch-down. Big 18" bright orange and white canopy 'chute makes for a really great recovery sequence. Includes highly detailed body panels and colorful scale-like decals. Height: 12" (30.5 cm) Dia. 3.8" (96.5 mm) Wt. 3.0 oz. (85 g).

ENGINES: B4-2 (1st Fit.) B6-2 C5-3 C6-3

No. 1243 \$12.00



SKILL LEVEL 5

(1/100th Scale) SATURN V MOON ROCKET

A truly magnificent scale reproduction of the world's most famous rocket... the mighty Saturn V. First space vehicle to carry men to the moon and most recently utilized to place Skylab in orbit around Earth. Scaled to 1/100th of its actual size, our model stands an impressive 43-1/2" tall. Single "D" engine power gives this baby a spectacular Cape Canaveral style lift-off. Apollo capsule has life-like recovery with escape tower give detailed authenticity. Corrugated plastic engine nozzles and Apollo capsule with escape tower give detailed authenticity. Report on clustering. Length: 43.5" (110 cm) Dia. 3.938" (100 mm) Wt. 9.9 oz. (280 g). ENGINES: May be flown as a 3 engine cluster or single engine. Cluster Power: C5-3 or C6-3 (3 required). "D" Power: D12-3 (1 required).

No. 1236 ONLY \$29.95

Engines, Launch System,
Glue, and Paint not included.
Ship. Wt. 3 lbs. 5 oz.

OVER 43"
TALL



—NASA Photos.

AltiTrak™ Altitude Finder

Skill Level 1

Track your rocket to the top of its flight and instantly lock-in its altitude on the "new" AltiTrak altitude finder. Displays exact model rocket altitude on metric scale — no guessing! (Conversion table included for feet.) A precision instrument made of durable plastic. Easy-to-assemble and looks like futuristic laser pistol. How high did it go? Now you'll know! Ship. Wt. 15 oz.

No. 2232 ONLY \$6.50

PREDICTED ALTITUDE COMPUTER

The Estes Pocker Size Altitude computer enables any rocketeer to predict his model rocket's altitude in a matter of seconds. Just move the center slide in a simple procedure for fast, accurate results. Three color calculator comes complete with instructions. Ship. Wt. 3 oz.

No. 9015 ONLY \$1.50



HOW HIGH
DID IT GO?

Designer's Special

Ideal parts assortment for the creative rocketeer. Develop your own R & D Program. Over 75 pieces at an excellent savings! Ship. Wt. 2 lbs.

Over
\$43.00
Value!

Body Tubes	Recovery Equipment
2 BT-5	3 Shock Cord 1/8" x 18"
2 BT-20	1 Shock Cord 1/8" x 36"
2 BT-60	1 Shock Cord 1/4" x 36"
1 BT-55	1 Streamer Material 1" x 30"
1 BT-60	6 Screw Eyes
Nose Cones	Miscellaneous
1 BNC-5E	3 Engine Blocks (EB-20A)
1 BNC-5S	3 Engine Holders (EH-3)
1 BNC-20B	3 Engine Holders (EH-2)
1 BNC-20R	1 Engine Mount (EH-2050)
1 PNC-60K	1 Engine Mount (EH-2060)
1 PNC-50Y	1 Nose Block (NB-20)
1 PNC-55AC	1 Nose Block (NB-50)
1 PNC-60L	1 Stage Coupler (JT-55C)
	1 Stage Coupler (JT-60C)
	1 Balsa Adapter (TA-2050A)
Fin Material	1 Multi-Purpose Paper Adapter Set (TA-1)
2 BFS-20	12 Launch Lugs (2-3/8" long)
2 BFS-30	1 Alpha Book of Model Rocketry
2 BFS-40	1 Fin Pattern Sheet No. 2
	1 Fin Pattern Sheet No. 3
Parachutes	
1 PK-18	
1 PK-12	
1 PK-18	
1 PK-24	

No. 1463 ONLY \$16.95



Launch Equipment Big Foot™

"Designed
for the
Big Ones!"

MODEL ROCKET LAUNCH CONTROL SYSTEM

The Estes Big Foot launch control system is capable of launching all Estes models including Maxi-Brutes. Futuristically designed launch platform features rugged plastic construction and enormous "two-foot-print" for maximum launch pad stability. Includes blast deflector plate, 1/8" x 36" two-piece launch rod, adjustable swivel mount to compensate for wind direction which is adaptable to either 1/8" or 3/16" launch rods, and has legs which remove easily for compact storage. This launch control unit is engineered for simple, quick assembly and features safety key, continuity check light, ignition button and 15 feet of launch cable. (Uses 4 alkaline type, "D" cell batteries and Estes Solar Igniters #2301 - not included.) Ship. Wt. 2 lbs.

No. 2208 ONLY \$17.95



PORTA-PAD PLASTIC LAUNCH PAD

Space-age designed, the Porta-Pad is rugged enough to take the stress of countless launchings, even with the big Estes "D" engines, yet is lightweight and compact enough for easy carrying and storage. Strong, girder construction. Orange plastic legs snap off for storage in range box. Friction grip secures rod firmly. Accommodates standard 1/8" rod (#2234) or heavy-duty 3/16" Maxi-Rod (#2239). Tilt adjustment allows you to compensate for wind. Ship. Wt. 1 lb. 8 oz.

No. 2217 ONLY \$7.75



Astron Launch Control System

Heavy-Duty Launch Controller features futuristic design and provides greater reliability with simplified assembly. Bright orange plastic controller gives realistic ignition system appearance. Recommended for 6 or 12 volt power sources. No need to remove battery from car, simply connect launch system's battery clips to terminals. Features include arming lamp, safety key, launch button, battery clips, micro-clips, and 18 feet of launch cable. Ship. Wt. 12 oz.

No. 2212 ONLY \$7.75

The Solar Launch Controller (#2300) or the Astron Launch Control System (#2212) are the recommended launch control systems for use with the Porta-Pad (#2217).



SOLAR LAUNCH CONTROLLER MODEL ROCKETRY'S MOST ADVANCED LAUNCH SYSTEM

The Solar Launch Control System should be standard equipment in your range box. This futuristically designed launch control unit requires only 4 alkaline type AA size batteries for power. Advanced shape allows for perfect hand-held control. Unit is easily assembled in minutes and features safety key, continuity check lamp, ignition button, and 15 feet of lightweight launch cable. System is constructed of durable "non-breakable" plastic. Micro-clips are presoldered. Use with Estes Solar Igniters (#2301). (Batteries not included.) Length: 6.1" (15 cm) Ht. 2.4" (6 cm), Width 1.44" (4 cm) Wt. (with batteries) 7 oz. (199 g). Ship. Wt. 8 oz.

No. 2300 ONLY \$8.95

Launch Supplies

1/8" DIA. TWO-PIECE LAUNCH ROD: Handy collapsible two-piece rod for portable launchers. Pieces slip together to make a 36" long rod. Base rod has a diameter of 1/8". Ship. Wt. 6 oz.
No. 2234 \$1.15

ADD-ON ROD: Sturdy 1/8" diameter, 18" long launch rod section expands two-piece rod to 54" length. Ship. Wt. 6 oz.
No. 2236 \$.60

3/16" DIA. MAXI-ROD: Perfect for launching Maxi-Brute kits and other large rockets. Fits Porta-Pad Tripod (#2217) and Big Foot Launch Pad (#2208). Two-piece construction 36" long, light-weight aluminum launch rod. Collapsible for easy storage. Ship. Wt. 12 oz.
No. 2239 \$2.25

MICRO-CLIPS: Equip your launcher with the best. Spring-loaded solid steel clips connect lead wires to igniters. Easy-to-clean and highly conductive with flat contact surfaces. Only 1.1 inches long. Attach to leads with or without solder. Ship. Wt. 1 oz.
No. 2247 2 for \$.95

LAUNCH ROD SAFETY CAP WITH UNIVERSAL SAFETY KEY



LAUNCH ROD SAFETY CAP with UNIVERSAL SAFETY KEY: For Launch Pad Safety! Includes plastic launch rod cap, universal safety key, and elastic cord. (Fits all Estes launch control systems except X-15 Starter Kit, (#0715). Ship. Wt. 4 oz.
No. 2205 \$.60

BLAST DEFLECTOR PLATE: Slip-on metal deflector plate fits any launcher using 1/8" or 3/16" rods. Protects launcher base from rocket blast. Four-inch diameter. Ship. Wt. 5 oz.
No. 2241 \$1.25

BATTERY CLIPS: Hook-up to car batteries. Heavy-duty clips connect to terminals up to 1" in dia. With insulators. Ship. Wt. 5 oz.
No. 2245 2 For \$1.15



ESTES FIN ALIGNMENT GUIDE

Position and glue fins quickly and easily. Fits body tubes up to BT-101. Designed for either 3 or 4 finned rockets, aligning fins at 90° or 120° to each other. Easily assembled with slip-together plastic parts. Adjusts quickly with plastic fin position clips. Ship. Wt. 3 lbs.

No. 2231 ONLY \$6.50



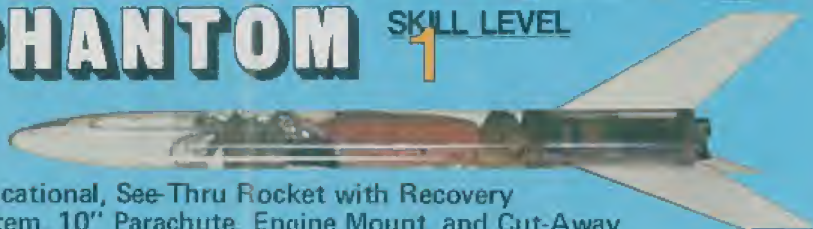
EMERGENCY REPAIR KIT

A must for every range box. Features many essential materials for "on-the-spot" repair of your model rockets. Ship. Wt. 8 oz.

INCLUDES: Sandpaper
Screw Eyes
White Glue Packet
Launch Rod Safety Cap
Universal Safety Key
Recloseable Pouch
Recovery Wadding
12" Parachute
1/8" and 1/4" Shock Cords
144" Shroud Line
Tape Discs
Launch Lugs
Shock Cord Mounts

No. 2233 ONLY \$2.00

PHANTOM SKILL LEVEL 1



Educational, See-Thru Rocket with Recovery System, 10" Parachute, Engine Mount, and Cut-Away Engine!

Perfect static demonstration model for workshops and presentations. Shows all internal components of a model rocket plus special cut-away version of C6-5 model rocket engine.

Ideal for displays and exhibits.

Length: 12.6" (32.0 cm) Dia. 0.976" (24.8 mm) Wt. 1.35 oz. (38.3 g) Ship. Wt. 3 oz.

No. 1207 ONLY \$4.25

START A MODEL ROCKET PROGRAM IN YOUR SCHOOL!

Want to get your teacher interested in a model rocketry program? Send us (1) your teacher's name, (2) the name of your school, and (3) the school's address (include street address, city, state, and zip). If your teacher has a specialty (such as science, industrial arts, physics, etc.), tell us. Send this information to Education Dept., Estes Industries, Dept. 51, Penrose, CO 81240. We will send your teacher information on how to start an educational model rocketry program.

ATTENTION 4-H, Scout, Cub, Camp, and Recreation Leaders:

For information on how model rocketry can help in your own program write: Education Department, Estes Industries, Dept. 51, Penrose, CO 81240. State type of group and what you would like to do.

Model Rocket Engines



★ Reliability-Proven In Over 175 Million Safe Launchings!

★ Quality-Tested for High Performance Flights!!

★ The Finest Engine Made . . . You Can Depend On It . . . For Every Flight Application!!

Graphic explanation of a model rocket engine's basic construction and functions.

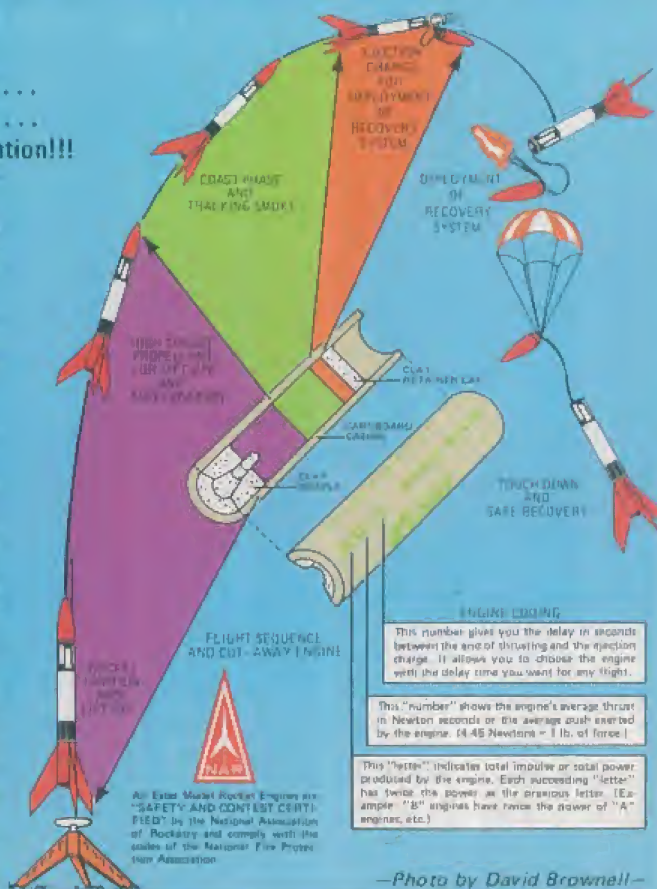
The design and development of the Estes model rocket engine was the real beginning of the safe, educational and exciting hobby that model rocketry has become.

Today's modern rocket engine is the result of over 21 years of engineering efforts at Estes Industries. Consequently, today's rocketeer has dependable, safety-proven engines for his use.

The energy-packed, solid propellant Estes model rocket engine is a complete power system for your rocket. It is designed and pre-manufactured to perform all power functions for dependable launch and activation of a recovery system. In one compact package it provides thrust for quick lift-off and acceleration to high altitudes, allows for a timed delay period to reach peak altitude while delivering a smoke trail for easy tracking, and supplies ejection power for the parachute or other recovery system for your rocket's safe return to Earth.

Reliability-proven in over 175 million launchings. Estes engines are manufactured under strict, quality-controlled conditions within exacting tolerance limits. You can count on them for consistent performance from one launch to the next. You'll launch with confidence in all your model rocketry activities.

More than 3% of all Estes model rocket engines produced are static tested to insure rocketeers of the highest performing, most reliable model rocket engines made. Here, an Estes employee static tests an engine for overall performance and safety in the advanced, Estes engine testing facility.



—Photo by David Brownell—





ROCKET ENGINE SELECTION CHART

Prod. No.	Engine Type	Prices 3 for	Total Impulse lb-sec ^① n-sec ^②	Time Delay (+ 15%)	Max. Lift Wt.	Max. Thrust	Thrust Duration	Initial Weight Oz. G.	Propellant Weight Oz. G.
SINGLE STAGE ENGINES					GREEN LABEL				
1593	1/2A6-2	\$2.25	0.28 1.25	2 sec.	2.5 oz.	46 oz.	0.20 sec.	0.53 15.0	0.055 1.56
1598	A8-3	\$2.35	0.56 2.50	3 sec.	4.0 oz.	48 oz.	0.32 sec.	0.57 16.2	0.110 3.12
1601	B4-2	\$2.45	1.12 5.00	2 sec.	4.0 oz.	48 oz.	1.20 sec.	0.70 19.8	0.294 8.33
1602	B4-4	\$2.45	1.12 5.00	4 sec.	3.5 oz.	48 oz.	1.20 sec.	0.74 21.0	0.294 8.33
1605	B6-2	\$2.45	1.12 5.00	2 sec.	4.5 oz.	48 oz.	0.83 sec.	0.66 19.3	0.220 6.24
1606	B6-4	\$2.45	1.12 5.00	4 sec.	4.0 oz.	48 oz.	0.83 sec.	0.71 20.1	0.220 6.24
1620	B8-5*	\$2.55	1.12 5.00	5 sec.	5.0 oz.	5 lb.	0.60 sec.	0.68 19.3	0.220 6.24
1617	C5-3	\$2.65	2.25 10.00	3 sec.	9.0 oz.	5 lb.	2.10 sec.	0.90 25.5	0.450 12.70
1613	C5-3	\$2.65	2.25 10.00	3 sec.	4.0 oz.	48 oz.	1.70 sec.	0.88 24.9	0.440 12.48
1614	C6-5	\$2.65	2.25 10.00	5 sec.	4.0 oz.	48 oz.	1.70 sec.	0.91 25.8	0.440 12.48
UPPER STAGE ENGINES ③					PURPLE OR BLUE LABEL				
1694	1/2A6-4	\$2.25	0.28 1.25	4 sec.	1.0 oz.	48 oz.	0.20 sec.	0.54 15.3	0.055 1.56
1699	A8-6	\$2.35	0.56 2.50	5 sec.	2.0 oz.	48 oz.	0.32 sec.	0.62 17.6	0.110 3.12
1608	B4-6	\$2.45	1.12 5.00	6 sec.	1.5 oz.	48 oz.	1.20 sec.	0.76 22.1	0.294 8.33
1607	B6-6	\$2.45	1.12 5.00	6 sec.	2.0 oz.	48 oz.	0.83 sec.	0.78 22.1	0.220 6.24
1621	B8-7*	\$2.55	1.12 5.00	7 sec.	2.5 oz.	5 lb.	0.60 sec.	0.72 20.4	0.220 6.24
1616	C6-7	\$2.65	2.25 10.00	7 sec.	2.5 oz.	48 oz.	1.70 sec.	0.95 26.9	0.440 12.48
BOOSTER ENGINES					RED LABEL				
1595	1/2A6-0	\$2.35	0.28 1.25	none	4.0 oz.	46 oz.	0.18 sec.	0.48 13.8	0.055 1.56
1600	A8-0	\$2.35	0.56 2.50	none	4.0 oz.	48 oz.	0.30 sec.	0.51 14.2	0.110 3.12
1608	B6-0	\$2.45	1.12 5.00	none	4.0 oz.	48 oz.	0.80 sec.	0.58 16.4	0.220 6.24
1622	B8-0*	\$2.55	1.12 5.00	none	6.0 oz.	5 lb.	0.60 sec.	0.60 17.0	0.220 6.24
1616	C6-0	\$2.65	2.25 10.00	none	4.0 oz.	48 oz.	1.68 sec.	0.80 22.7	0.440 12.48

Complete instructions and Solar Rocket Igniters are included with each package of Estes model rocket engines.

*Series 11 engines have semi-core-burning grain with large propellant burning area for high initial thrust with short thrust duration. New "B8" type engines replace previous "B14" type engines.

All engines listed on this page are 2.75 in. (6.99 cm) long and 0.690 in. (1.75 cm) dia.

Ship. Wt. of each package of engines is approximately 4 oz.

IMPORTANT-IMPORTANT

All the rockets shown in this catalog can be flown over and over again. Simply replace the engine, igniter, and recovery wadding for each new flight.



ASTRON IGNITERS: Easy to use for reliable ignition every time. Recommended for launch systems using 6 or 12 volt car batteries or 12 volt lantern batteries. Installation procedure featured on engine instructions. (Patent No. 3,363,559). Not recommended for Solar Launch Controller (#2300) or Big Foot Launch Control System (#2208). Ship. Wt. 1 oz.

No. 2225 6 for \$1.15

SOLAR IGNITERS: Add increased reliability at lift-off with Estes "high performance" Solar Igniters. This updated igniter is designed especially for the Solar Launch Controller (#2300) and Big Foot Launch Control System (#2208). Features easy engine installation and is suitable for all Estes launch control systems. Unique four element design makes it the most dependable igniter made. Ship. Wt. 1 oz.

No. 2301 6 for \$1.15



MINI-ENGINE SELECTION CHART

Prod. No.	Engine Type	Prices 4 for	Total Impulse lb-sec ^① n-sec ^②	Time Delay (+ 15%)	Max. Lift Wt.	Max. Thrust	Thrust Duration	Initial Weight Oz. G.	Propellant Weight Oz. G.
SINGLE STAGE ENGINES					GREEN LABEL				
1500	1/4A3-2T	\$2.35	0.14 0.625	2 sec.	1 oz.	23 oz.	0.19 sec.	0.173 4.9	0.031 0.88
1503	1/2A3-2T	\$2.45	0.28 1.25	2 sec.	2 oz.	28 oz.	0.36 sec.	0.198 5.6	0.062 1.75
1506	A3-2T	\$2.55	0.56 2.50	2 sec.	3 oz.	28 oz.	0.86 sec.	0.254 7.2	0.124 3.50
1507	A3-4T	\$2.55	0.56 2.50	4 sec.	2 oz.	28 oz.	0.86 sec.	0.268 7.6	0.124 3.50
1511	A10-3T	\$2.55	0.56 2.50	3 sec.	5 oz.	48 oz.	0.26 sec.	0.277 7.8	0.133 3.78
UPPER STAGE ENGINES ③					PURPLE OR BLUE LABEL				
1601	1/4A3-4T	\$2.45	0.14 0.625	4 sec.	1 oz.	23 oz.	0.18 sec.	0.182 5.2	0.031 0.88
1508	1/2A3-4T	\$2.45	0.28 1.25	4 sec.	1 oz.	28 oz.	0.36 sec.	0.210 5.9	0.062 1.75
1509	A3-4T	\$2.55	0.56 2.50	8 sec.	1 oz.	25 oz.	0.86 sec.	0.282 8.0	0.124 3.50
BOOSTER ENGINES					RED LABEL				
1505	1/2A3-0T	\$2.45	0.28 1.25	none	3 oz.	26 oz.	0.26 sec.	0.180 4.7	0.062 1.75
1508	A3-0T	\$2.55	0.56 2.50	none	3 oz.	28 oz.	0.86 sec.	0.228 6.4	0.124 3.50
1510	A10-0T	\$2.55	0.56 2.50	none	5 oz.	48 oz.	0.26 sec.	0.235 6.7	0.133 3.78

Mini-Engines are 1.75 in. (4.45 cm) long and .500 in. (1.27 cm) dia. Ship. Wt. of each package of mini-engines is approximately 2-1/2 oz.



MIGHTY "D" ENGINES

Recommended Only for Experienced Rocketeers!

Prod. No.	Engine Type	Prices 3 for	Total Impulse lb-sec ^① n-sec ^②	Time Delay (+ 15%)	Max. Lift Wt.	Max. Thrust	Thrust Duration	Initial Weight Oz. G.	Propellant Weight Oz. G.
SINGLE STAGE ENGINES					GREEN LABEL				
1666	D12-3	\$4.95	4.48 20.0	3 sec.	14 oz.	9 lb.	1.70 sec.	1.40 42.2	0.879 24.83
1667	D12-5	\$4.95	4.48 20.0	5 sec.	10 oz.	8 lb.	1.70 sec.	1.52 43.1	0.879 24.83
UPPER STAGE ENGINES ③					PURPLE OR BLUE LABEL				
1668	D12-1	\$4.95	4.48 20.0	7 sec.	8 oz.	0 lb.	1.82 sec.	1.40 42.2	0.879 24.83
1669	D12-4	\$4.95	4.48 20.0	9 sec.	6 oz.	0 lb.	1.82 sec.	1.51 43.2	0.879 24.83
BOOSTER ENGINES					RED LABEL				
1665	D12-0	\$4.95	4.48 20.0	none	14 oz.	9 lb.	1.70 sec.	1.40 40.9	0.879 24.83

"D" engines are 2.75 in. (6.99 cm) long and 0.945 in. (2.40 cm) dia.

Ship. Wt. of each package of "D" engines is approximately 6-1/2 oz.

Complete instructions and Solar Rocket Igniters are included with each package of Estes model rocket engines.

NOTES:

- ① Pound-seconds (Figures shown are maximum.)
- ② Newton-seconds (Figures shown are maximum.)
- ③ Or Single Stage Engine if used in very light rocket.

RECOVERY WADDING: Provides protection from hot ejection gases for parachutes and streamers. Each package contains approximately 75- 4-1/2" squares - enough wadding for up to 25 flights. Instructions for installation are included in each package. Ship. Wt. 6 oz.

No. 2274 \$1.25



WIN \$75.00 IN FREE MERCHANDISE!! ENTER THE DESIGN OF THE MONTH CONTEST

Have an idea for an original design? Enter our Design of the Month competition today. Your design could be published in an issue of Model Rocket News. Simply follow the rules below.

- All entries become the property of Estes Industries and cannot be returned.
- Employees of Estes Industries and members of their immediate families are not eligible.
- Any type of model rocketry design can be entered (rockets, boost-gliders, launching or recovery devices, etc.).
- Designs should be new, original, and different, but they also need to be workable. The goal is to develop something new that other rocketeers can build and use successfully, too.
- Entries will be judged on practicality, originality, neatness, completeness, and clarity. All plans must be flight tested and proven.
- Your design entry should include a parts list and any instructions or diagrams you feel would be helpful.
- Please do not send the actual model as it cannot be returned.
- Photos of entries are greatly appreciated, but are not required.
- You may send as many entries as you like.
- New contest every month.
- All designs reaching Estes Industries during the calendar month will be entered in that month's competition. (Date of receipt, not postmark, will determine the month in which a design will be entered.)
- If two or more exceptional entries are received during any month, the judges may, at their discretion, make identical first-place awards or give additional honorable mentions.
- Designs should be sent to the Design of the Month, c/o MRN Editor, Estes Industries, Inc., Penrose, Colorado 81240. However, all plans sent to us which are not specifically addressed to another contest or department will be automatically placed in the Design of the Month Competition.
- Each month the designer of the winning entry will receive a certificate entitling them to \$75.00 in merchandise and an award certificate suitable for framing. Award winners will be notified by mail.

GOOD LUCK!!!

NAR/HIAA Model Rocketry Safety Code

- Construction** — My model rockets will be made of lightweight materials such as paper, wood, plastic and rubber, without any metal as structural parts.
- Engines** — I will use only pre-loaded factory-made model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.
- Recovery** — I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.
- Weight Limits** — My model rocket will weigh no more than 453 grams (16 ozs.) at liftoff and the engine will contain no more than 113 grams (4 ozs.) of propellant.
- Stability** — I will check the stability of my model rockets before their first flight, except when launching models of already proven stability.
- Launching System** — The system I use to launch my model rockets must be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 15 feet from any rocket that is being launched.
- Launch Safety** — I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.
- Flying Conditions** — I will not launch my model rockets in high winds, near buildings, power lines, tall trees, low flying aircraft, or under any conditions which might be dangerous to people or property.
- Launch Area** — My model rockets will always be launched from a cleared area, free of any easy to burn materials, and I will only use non-flammable recovery wadding in my rockets.
- Jet Deflector** — My launcher will have a jet deflector device to prevent the engine exhaust from hitting the ground directly.
- Launch Rod** — To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.
- Power Lines** — I will never attempt to recover my rocket from power lines or other dangerous places.
- Launch Targets & Angle** — I will not launch rockets so their flight path will carry them against targets on the ground, and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.
- Pre-Launch Test** — When conducting research activities with unproven designs or methods, I will, when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.

As a member of the Estes Model Rocketry Program, I promise to faithfully follow all rules of safe conduct as established in the above code.
Signature _____

Recovery Supplies

PARACHUTE KITS: Get the best in parachute recovery! Two-color printed plastic 'chutes give maximum visibility with easy-trak design. Lightweight, durable, and easily folded. These 'chutes are only 0.0075" thick, allowing the most material to be packed into the least body space. Each kit comes complete with 'chute material, tape discs, and shroud lines. Ship. Wt. 2 oz.

Prod. No.	Description	Parachute Diameter	Net Weight	Price Each
2261	PK-6	8 inches	.035 oz.	\$1.00
2264	PK-12	12 inches	.078 oz.	\$1.10
2267	PK-18	18 inches	.144 oz.	\$1.15
2271	PK-24	24 inches	.298 oz.	\$1.35

SHOCK CORD: Specify width when ordering. Ship. Wt. 1 oz.
1/8" wide: Net Wt. 0.039 oz.
No. 2276 \$.50
1/4" wide: Net Wt. 0.078 oz.
No. 2277 \$.55

Also 36" long for greater stretch on those larger birds.
1/8" wide: Net Wt. 0.078 oz.
No. 85744 \$.60

TAPE DISCS: Fasten shroud lines to plastic parachutes or streamers with these 3/4" dia. pressure sensitive Tape Discs. In sheets of 6 discs. Ship. Wt. 1 oz.
No. 2294
4 sheets of 6 \$1.10



STREAMER MATERIAL: Bright orange, flame-resistant crepe paper streamers. In 7-1/2 foot lengths, enough for two to eight streamers. Specify size when ordering. Ship. Wt. 1 oz.
1" wide: Net Wt. .092 oz.
No. 2341 \$1.85
2" wide: Net Wt. .184 oz.
No. 2343 \$2.10

SCREW EYES: Specify size when ordering. Ship. Wt. for 6 eyes, 1 oz.
LARGE EYE:
1" long: .04 oz.
No. 2280 \$1.00
SMALL EYE:
3/4" long: .03 oz.
No. 2279 \$.95
EXTRA SMALL EYE:
5/8" long: .01 oz.
No. 2281 \$.85

SHROUD LINES: Build reliable, durable, custom parachutes with this strong, hard surface shroud line cord. Comes in 70 yard spools. Ship. Wt. 5 oz.
No. 2340 \$1.00

TAPE STRIPS: For top strength, low bulk and low weight, fasten shroud lines with these 1/4" x 3/4" tape strips. In sheets of 12 strips. Ship. Wt. 1 oz.
No. 38412
6 sheets of 12 \$1.15

SNAP SWIVELS: For quick changes and reduced tangling in your recovery systems, use these tiny 1" long snap swivels. Net Wt. .01 oz. Ship. Wt. for 12 swivels, 1 oz.
No. 2292 \$1.50

TECHNICAL REPORTS SPECIAL PUBLICATIONS

Rocket Stability — TR-1
No. 84721 \$.50
Multi-Staging — TR-2
No. 84722 \$.50
Altitude Tracking — TR-3
No. 84723 \$.50
Rear Engine Boost Gliders — TR-4
No. 84724 \$.50
Cluster Techniques — TR-6
No. 84726 \$.50
Front Engine Boost Gliders — TR-7
No. 84727 \$.50
Model Rocketry Study Guide — TR-8
No. 84728 \$1.00
Altitude Prediction Charts — TR-10
No. 84730 \$1.50
Aerodynamic Drag of Model Rockets — TR-11
No. 84731 \$1.50
Model Rocket Engines — TN-1
No. 84700 \$.50

Model Rocket Engine Performance — TN-2
No. 84701 \$.50
Elementary Mathematics of Model Rocket Flight — TN-5
No. 84704 \$.50
Recovery Techniques — TN-6
No. 84705 \$.50
ALPHA - Mini Book of Model Rocketry
No. 901022 \$.25
Model Rocket Launch Systems
No. 2811 \$.50
Estes Guide For Aerospace Clubs
No. 2817 \$.75
Space Age Technology
No. 2813 \$1.50
A "Teacher's" Manual (No. 2823) is available to educators for \$1.50.
Estes Model Rocket Contest Guide
No. 2816 \$.75

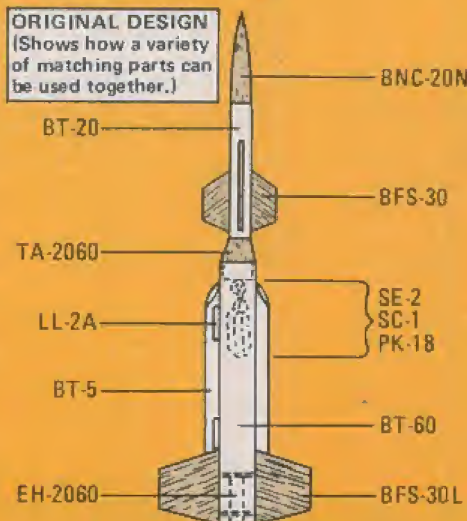
The Laws of Motion and Model Rocketry
No. 2821 \$.35
Aerospace Education and Model Rocketry
No. 2816 \$1.50
(Single copies free to educators requesting it on school stationery.)
The Alpha Book of Model Rocketry
No. 2820 \$.75
Industrial Arts Teachers Manual for Model Rocketry
No. 2810 \$1.00
Model Rocketry Technical Manual
No. 2819 \$.35
Building a Wind Tunnel — TR-5
No. 84725 \$.50
Is That Parachute Too Big? TN-3
No. 84702 \$.50
RECROC - Recreational Program
No. 2426 \$1.25
Camp Leader's Model Rocketry Manual
No. 2822 \$1.00

Build Your Own Design With Estes Quality Model Rocket Parts

Once you have constructed several model rocket kits and have become familiar with the basic Estes Technical Reports you will no doubt have a variety of ideas for unique designs of your own. In order to select the proper parts for your original design it is important for you to understand our system of parts description numbers.

Nearly all matching Estes parts have the same series description number. Those which do not feature an additional explanation as to where they can be used. Normally, parts listing the same series description number will be interchangeable with each other. For instance, a #20 body tube (BT-20) would mate with a #20A balsa nose cone (BNC-20A), a #20C payload section (PS-20C), or a #20B engine block (EB-20B). Further, a #2060 tube adapter (TA-2060) will adapt a BT-20 to a BT-60, and a #5055 centering ring (AR-5055) will center a BT-50 within a BT-55. By using balsa or paper adapters almost any combination of parts can be joined together. For ordering, be sure to use both the product number and the series description number (name).

ORIGINAL DESIGN
(Shows how a variety of matching parts can be used together.)



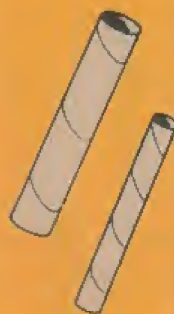
Model Rocket Parts

Fin Stock

Top quality balsa sheeting for making fins for model rockets. For maximum strength, grain of wood should follow the leading edge of fin.

Prod. No.	Description	Price	Dimensions (in inches)	Weight in Oz. Net.	Ship.	Major Use
3164	BFS-20	3 for \$1.00	1/16x3x9	.130	4	High Performance
3166	BFS-20L	3 for \$1.20	1/16x3x12	.173	6	High Performance
3168	BFS-30	3 for \$1.05	3/32x3x9	.150	4	Sport Models
3170	BFS-30L	3 for \$1.25	3/32x3x12	.200	6	Sport Models
3172	BFS-40	3 for \$1.20	1/8x3x9	.200	4	Cluster Rockets
3174	BFS-40L	3 for \$1.25	1/8x3x12	.265	6	Glider Wings

Body Tubes



Prod. No.	Description	Price Each	Length	Inside Diameter	Outside Diameter	Wall Thickness	Weight in Oz. Net.	Ship.
Spiral-Wound Paper Tube for nose sections and strap-on payloads.								
3070	BT-5	\$.95	18"	0.515"	0.541"	0.013"	.219	11
Spiral-Wound Paper Tube, for competition and sport models.								
3072	BT-20	\$1.00	18"	0.710"	0.736"	0.013"	.288	11
Spiral-Wound Paper Tube, for sport and high performance payload models.								
3073	BT-50	\$1.10	18"	0.950"	0.976"	0.013"	.378	11
Spiral-Wound Paper Tube, for sport and demonstration models.								
3074	BT-55	\$1.35	18"	1.283"	1.325"	0.021"	.672	11
Spiral-Wound Paper Tube, for sport and demonstration models.								
3075	BT-60	\$1.45	18"	1.595"	1.637"	0.021"	.860	11
Spiral-Wound Paper Tube, for monster models and tall rings.								
3076	BT-70	\$1.90	17.5"	2.175"	2.217"	0.021"	1.300	14
Spiral-Wound Paper Tube, for giant-scale models.								
3043B	BT-101	\$2.50	16.5"	3.896"	3.938"	0.021"	1.974	16

Engine Blocks

Prod. No.	Description	Price 3 for	Outside Dia.	Inside Dia.	Length	Fits	Weight in Oz. Net.	Ship.
3131	EB-20A	\$.75	.708"	.65"	1 1/4"	BT-20	.009	1

Nose Cones

Nose cone dimensions listed in columns 1, 2, and 3.

In "Description" column BNC stands for balsa nose cone and PNC for plastic nose cone.



Shape	No.	Prod. No.	Description	Price Each	Dimensions			Average Weight	Ship. Wt.
					1	2	3		
BT-5	1	8002	BNC-5V	\$.95	3/4"	0.541"	1/4"	0.013 oz.	1 oz.
	2	8000	BNC-5E	\$.95	1-3/8"	0.541"	1/4"	0.020 oz.	1 oz.
	3	8001	BNC-5S	\$.95	1-1/2"	0.541"	1/4"	0.016 oz.	1 oz.
	4	8003	BNC-5W	\$1.10	2-7/8"	0.541"	1/4"	0.039 oz.	2 oz.
BT-20	5	8004	BNC-20A	\$.85	13/16"	0.736"	1/4"	0.03 oz.	1 oz.
	6	8005	BNC-20B	\$1.00	1-11/16"	0.736"	5/16"	0.05 oz.	1 oz.
	7	8007	BNC-20R	\$1.10	2-3/4"	0.736"	3/8"	0.07 oz.	2 oz.
	8	8006	BNC-20N	\$1.20	2-3/4"	0.736"	1/2"	0.08 oz.	2 oz.
BT-50	9	8008	BNC-50J	\$1.10	1-3/8"	0.976"	1/2"	0.08 oz.	4 oz.
	10	8009	BNC-50K	\$1.25	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	10	71008	PNC-50K	\$1.05	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	11	8010	BNC-50X	\$1.35	3-1/4"	0.976"	1/2"	0.15 oz.	4 oz.
	12	8011	BNC-50Y	\$1.60	4-3/8"	0.976"	3/8"	0.16 oz.	6 oz.
	12	71009	PNC-50Y	\$1.45	4-3/8"	0.976"	3/8"	0.16 oz.	6 oz.
BT-55	13	8012	BNC-55AA	\$1.55	3-1/8"	1.325"	1/2"	0.15 oz.	4 oz.
	14	8014	BNC-55F	\$1.85	3-7/8"	1.325"	1/2"	0.19 oz.	4 oz.
	15	71070	PNC-55AC	\$1.95	5-3/8"	1.325"	3/8"	0.32 oz.	6 oz.
	16	71075	PNC-55AO	\$1.90	5"	1.325"	3/4"	0.43 oz.	4 oz.
BT-60	17	8020	PNC-60L	\$1.60	3-1/8"	1.637"	5/8"	0.34 oz.	4 oz.
	18	8021	PNC-60AH	\$2.85	6-5/8"	1.637"	7/8"	1.0 oz.	6 oz.
BT-70	19	8019	BNC-70AJ	\$2.95	4-1/4"	2.217"	1"	0.85 oz.	6 oz.
BT-101	20	71050	PNC-101	\$2.75	12-1/2"	3.938"	3/4"	3.60 oz.	12 oz.

Engine Mounts

Use Estes, high performance engine mounts for your original designs. All engine mounts feature easy-to-assemble instructions and lightweight components.



Engine Type	Prod. No.	Description	Price	Fits	Net Weight Oz.	Ship. Wt. (lb.)
For Series I & II Engines - A, B, & C type .69" x 2.25"	3150	EH-2050	\$1.05	BT-50	0.1	5
	3151	EH-2055	\$1.05	BT-55	0.14	5
	3152	EH-2060	\$1.05	BT-60	0.17	5
For Series IV Engines - D type .945" x 2.75"	3155	EM-5063	\$1.35	Shunt V	0.4	5
For T Series Mini-Engines .6" x 1.75"	3153	EM-520	\$1.00	BT-20	0.09	5
Special Purpose Quick Change Conversion Mount - From Series IV Engines to Series I & II Engines	3154	EM-2050	\$1.10	BT-50	0.19	5

Balsa Adapters

Adapters give flexibility for rocket design. Switch from one size body tube to another for payload capsules, parachute compartments, propulsion sections, etc. Any adapter can be hollowed to make a passage for ejection gases. All adapters have at least 1/2" mating surface on each end.

Stage Coupler

For multi-staging, joining body tubes, positioning adapter rings, etc. Make perfect guides for cutting body tubes and sanding cut edges of body tubes, too. Ship. Wt. for all is 3 oz. each.

Nose Blocks

Use these top quality feather-weight balsa nose blocks in payload sections and anywhere else a solid bulkhead is required. Precision turned for exact fit in body tubes.

Construction Supplies

Centering Rings

AR-5055 CENTERING RINGS: For centering a BT-50 body tube within a BT-55. Extra strong for "D" engine mounts. Weight 0.062 oz. each. Ship. Wt. 2 oz.

No. 3012 4 for \$1.00

AR-2050 CENTERING RINGS: For centering a BT-20 body tube within a BT-50. Greater strength makes for use with high thrust engines. Weight per pair .285 oz. Ship. Wt. 2 oz.

No. 3100 10 for \$1.30

Competition Payloads

COMPETITION PAYLOAD: How high can your rocket lift an ounce of lead? This 1 oz. payload weight, 3/4" in diameter, is certified for FAI competition. Ship. Wt. 2 oz.

No. 38292 2 for \$1.00

Launch Lugs

LAUNCH LUGS: Super-strength laminated launch lugs feature mylar plastic core for durability, paper outer layer for easy gluing. Inside diameter 5/32" fits 1/8" launch rod. Ship. Wt. 1 oz.

1-1/4" long

No. 2321 12 for \$1.10

2-3/8" long

No. 2322 10 for \$1.25

6" long

No. 2326 4 for \$1.30

MAXI-ROD LAUNCH LUG: 2" long, fits 3/16" diameter launch rod.

No. 2328 4 for \$.95

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Prod. No.	Description	Price Each	Mates Tubes	Length	Taper Length	Weight in Oz.	Ship.
8031	TA-520	\$1.00	BT-5 to BT-20	1.75"	0.75"	0.04	1
8032	TA-550	\$1.10	BT-5 to BT-50	2.2"	1.0"	0.06	4
8041	TA-2050	\$.95	BT-20 to BT-50	3.0"	2.0"	0.15	4
8033	TA-2055	\$1.25	BT-20 to BT-55	2.5"	1.5"	0.22	4
8034	TA-2060	\$1.90	BT-20 to BT-60	3.0"	2.0"	0.20	4
8035	TA-5055	\$1.90	BT-50 to BT-55	2.0"	1.0"	0.60	4
8036	TA-5060	\$2.30	BT-50 to BT-60	3.0"	2.0"	0.23	4
8038	TA-5560	\$2.40	BT-55 to BT-60	2.2"	1.0"	0.25	4
8039	TA-6070	\$2.15	BT-60 to BT-70	2.7"	1.5"	0.65	4

Prod. No.	Description	Price Each	Outside Diameter	Inside Diameter	Length	Fits	Average Weight
3050	JT-5C	\$.60	.513"	.455"	3/4"	BT-5	.020 oz.
3051	JT-20C	\$.60	.708"	.650"	3/4"	BT-20	.027 oz.
3052	JT-50C	\$.65	.949"	.920"	1"	BT-50	.051 oz.
3053	JT-55C	\$.65	1.28"	1.25"	1.3"	BT-55	.088 oz.
3054	JT-60C	\$.65	1.59"	1.55"	1-1/2"	BT-60	.124 oz.
3055	JT-70A	\$1.00	2.175"	2.115"	1-1/4"	BT-70	.140 oz.

Prod. No.	Description	Price Each	Outside Diameter	Length	Fits	Weight in Oz.	Ship.
70152	NB-20	\$.75	.710"	3/4"	BT-20	.014	1
70158	NB-50	\$.85	.950"	1"	BT-50	.040	4
70162	NB-55	\$.85	1.283"	1-1/4"	BT-55	.115	4
70164	NB-60	\$1.00	1.595"	1-1/2"	BT-60	.190	4

Dowels

DOWELS: Extra strong, lightweight seasoned maple dowels. Ship. Wt. 5 oz.

1/8" x 18" No. 32056 8 for \$.85

1/12" x 12" No. 32058 8 for \$.85

Engine Holders

ENGINE HOLDER: Flat spring steel design gives easy installation and low drag. Recommended for sport and demonstration models. For Regular and "D" engines. Ship. Wt. 1 oz.

No. 3140 3 for \$1.30

For Mini-Engines, Ship. Wt. 1 oz.

No. 3142 3 for \$1.05

Paper Adapters

RA-2055 RINGS: 10 rings for centering and mounting BT-20 in BT-55. Ship. Wt. 2 oz.

No. 3111 10 for \$.95

RA-2060 RINGS: 10 rings for centering and mounting BT-20 in BT-60. Ship. Wt. 2 oz.

No. 3113 10 for \$1.00

MULTI-PURPOSE SET: Includes a total of 20 rings for positioning BT-5 in BT-20; BT-5, BT-20, BT-30 in BT-50; and BT-5, BT-20 and BT-50 in BT-60. Also three universal tapered shrouds and instructions. Ship. Wt. 2 oz.

No. 8030 \$1.10

RA-2050 RINGS: 20 rings for centering and mounting BT-20 in BT-50. Ship. Wt. 2 oz.

No. 3110 20 for \$.90

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SKILL LEVEL

4

Model Rocketry's First Scale

space shuttle

*So Realistic, That
From A Distance,
You'd Swear It Was
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glue, and finishing
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included in this kit.)*

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